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Casket for Address presented to Ex-Lord Mayor Knill.—Designed by Mr. J. F. Bentley, Architect ..... *Single-Page Ink-Photo.*
New Premises, Tottenham Court-road.—Mr. C. Fitzroy Doll, Architect ..... *Single-Page Ink-Photo.*
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Architecture at the Paris Salons.

AS usual, the bulk of the architectural drawings are congregated at the old Salon in the Palais de l'Industrie, and the Champ de Mars Salon has but a small and unimportant collection of architectural exhibits to show. Probably one very practical reason why the architects, as a body, adhere to the old Salon is that they know there will be room to hang their drawings there, and they have no assurance of that at the Champ de Mars. Indeed, it is difficult to know where the acreage of large strainers (frames are not required for the architectural drawings) could possibly be found room for at the new Salon. This year the number at the Palais de l'Industrie—or, at any rate, the wall-space occupied by them—is rather larger than usual, the less worthy exhibits, which do not gain grace to be hung in one of the three rooms, but are banished to the gallery, occupying nearly the whole of one side of the latter, besides the usual space at the end and part-way up the other side.

Unfortunately the superiority of the exhibition is rather manifested in quantity than in quality. The set of drawings which form the *pièce de résistance* of the year's architectural exhibits are usually to be found arranged together in one of the three rooms of predilection. But there is nothing this year to fill the place occupied by M. Chedanne's splendid set of Pantheon drawings last year, or the remarkable sets of drawings of Cambodian architecture of Baalbek, and of other great remains of antiquity, which we remember in this position in previous years. The usual group of central and predominant interest is wanting.

The set of drawings which come nearest to supplying the deficiency are the "Études Renaissance" by M. Pontremoli, a former pupil of MM. André and Laloux, and now at the Villa Medici. These are mostly geometrical drawings beautifully executed in water-colour, including the "Porta Pallio" at Verona, two tombs from Bergamo and Padua, and various other fine bits of Renaissance work, the drawings of which are finished with a perfection of realism which we never see in England, but which, when the object is the adequate representation of ancient work, cannot be considered as wasted labour. To work up a drawing for a new design, not yet executed, in this minute manner, would be a waste of time, as it would not affect the execution of the work at all, nor be of any particular assistance to the workman; but with a drawing which is an illustration and record of an ancient piece of work there cannot be too much trouble expended on rendering it a full and precise representation; and it is in this class of work that the French so much surpass us. From the style of M. Pontremoli's drawings we may look on him as one who may be likely to furnish to some future Salon a monumental set of drawings to rival those of some of his predecessors to whom reference has been made.

Failing the appearance of any great collection of drawings by one hand, we naturally turn next to see whether the recent great competition for the 1900 Exhibition buildings has set any special mark on the architectural exhibits of this year; but the subject is not very largely illustrated, and the drawings which do illustrate it have a tendency, we fear, to be amusing rather than seriously interesting. We are treated at all events to several remarkable suggestions for utilising and improving, for the occasion, the Eiffel Tower, which now must be regarded, we fear, as an accepted evil. M. Boutron shows the tower in the likeness of a huge gilded toy, with the ends of a semi-circular gilded pavilion showing symmetrically on each side of it. The Eiffel Tower does not show its scale much as it is; the decoration and treatment employed here would reduce the apparent scale still more. The whole style of work suggested would be tolerably suitable for a temporary exhibition building on a much smaller scale; on the scale suggested the effect would be barbaric, not to say barbarous. The plan shows a proposal to utilise the space between the river and the Trocadéro building as an ornamental lake, an effect hardly worth the cost it would entail. M. Pille's "projet" for the exhibition shows the Eiffel Tower under another disguise, covered with an architectural mask intended to give it a more solid and monumental effect. This is less vulgar than the other, but just as absurdly out of scale. If the Eiffel Tower is to remain, the more simply its construction lines are displayed the better; let us see it as what it is, not as a monster in disguise. Other portions of M. Pille's design, his numerous sketches of groups of Colonial and Foreign exhibition buildings along the banks of the river, for instance, are very clever and picturesque, and his domed palaces on each side of the Champ de Mars, intended to occupy nearly the positions now taken up by the Palais des Beaux-Arts and Palais des Arts Libéraux, are treated in a fine and dignified manner. M. Courtois-Suffit exhibits some fragmentary sketches towards an exhibition building, of which the elevation of the "Palais du Meuble" has better architectural lines, and is more sober in its design than any of those previously noticed; the water-colour drawing of the proposed effect of part of the author's exhibition building, by moonlight and artificial light contrasted, is cleverly sketched, but is rather a piece of clap-trap.

The desire to be in front in the great show of 1900 has evidently been answerable for the appearance of some other designs, which their authors fondly hope to see accepted and grouped with the exhibition buildings. M. Tronchet's "Un Eden pour 1900," is a design for a vast Casino, to be erected on a site on the Champs Elysées. There is merit in the plan, but as to the design, it is the kind of thing which an architect can only propose from a desire to catch the public and make money, not from any interest in his art. M. Esnault-Pelterie's "Etude d'un Nouveau Palais aux Champs-Elysées" is of a more serious order, and appears (though not so stated in the catalogue) to be intended as a design for a building to take the place of the Palais de l'Industrie when the inevitable moment arrives for the destruction of the latter. It is a design which affords a curious illustration of that lack of perception of scale which is so common a failing among French architects at the present day, in spite of the exceedingly "classical" training they go through, which is supposed to have such value in specially developing the sense of scale and proportion. The design consists of two well-treated blocks of building of Classical ordonnance, which on plan take the form ⊂ ⊃, the two blocks of building each containing a garden in their centre, and leaving between them a square space equal to the width of building and garden combined. This square space is covered over

by a gigantic iron dome of segmental section, with an enormous kind of crown or coronet on the top of it as a finish (the coronet itself is about as wide as two bays of the "order" of the buildings), and this dome is made to appear to abut against the elegant classic structures on each side of it. The contrast is something perfectly ludicrous, and one cannot help feeling that, however weak we may be in some points of architectural drawing and design in comparison with our neighbours, our architects have at least sufficient common-sense left not to perpetrate such anomalies in design as this; and certainly our Royal Academy would not hang such things if they were sent in. As regards the plan, the general idea is not a bad one, if it were only treated in a less preposterous manner.

Among other things connected with the future Exhibition are two or three designs for the building for the exhibition of the Sèvres manufactures, which it is intended to make a striking feature. Of these, that by M. Moisand is a glass-roofed building coated with ceramic work on a large scale, blue and yellow colours predominating, especially in the central dome. The best part of the design is in the arcades at each side, with either gold mosaic or yellow ceramic backgrounds and white statues showing up in front of them, and blue vases making points in front of the statues. The design is spoilt by the flagrant vulgarity of the turrets or minarets at each end of the façade. The design by M. Selmersheim is free from bad taste but rather commonplace. That by M. Félix Debat is, we hope, the one to be carried out, for it will not be easy to beat it. It is a fine, sober design, with no garish eccentricities, either of outline or of detail; the strongly-marked horizontal cornice keeps all the coloured details well in their place. The upper portion of the walls is pierced by plain circular-headed windows, the wall-spaces between which are decorated in panels with designs of dancing figures and ornamental detail in coloured tile-work. Beneath the string-course under this main range of windows is a frieze of figures in flat treatment, interrupted beneath each window by a niche crowned with a small pediment (the lines of which cut into the window space above), and occupied by a figure in relief. The effect of the whole design is at once decorative and architectural, and it shows real refinement of taste.

The exhibition, of course, contains a considerable proportion of those "projets," shown in very large and beautifully-shaded geometrical drawings, which are always a characteristic of the Salon architectural rooms. M. Josso's "Musée de Nantes" has very much the appearance of a "projet," but is exhibited as an actual work, either contemplated or executed. It shows the inevitable rusticated ground story; there is an Ionic order of coupled columns above, with statues between them. The plan is effective, and shows a large columned entrance-hall running across the building, with a square sculpture-hall opening out of it at each end; beyond this is a symmetrically-planned grand staircase, and beyond this again is a great square central hall, with an arcade round it, and top-lighted, intended for antique sculpture. In connexion with such an idea, the rampant character of the painted decoration is utterly out of place, and, indeed, almost revolting. M. Bauhain's "Musée d'Armes et de Médailles" is a well worked-out design of purely academical type. Of a very different order is M. Hannotin's fine design for "Une Nécropole avec Monument d'Incineration"—in fact a cemetery or Campo Santo combined with a crematorium. The main building is a great oblong court with a cloister round it, divided into groups of three arches by massive turrets which rise at regular intervals; at the upper end of the court is a kind of circular chapel consisting of a large dome springing nearly from the ground line and terminating in a smaller dome developing out of the upper portion of the large one. The extract flues from the furnaces (as we take them to be) assume a nearly columnar form, and rise separately at three or four points. The drawings are numerous and very impressive, the geometrical drawings being coloured so as to give a great deal of picturesque—almost poetic—effect; the whole is a very remarkable and original architectural conception.

Among others of the larger and more important designs is the study by M. Terra (a pupil of M. Laloux) for a Palais de Justice for Lisbon, which is announced as "commended by the Portuguese Government." This is a fine design of a stern character, though the author of it is obviously very much indebted to the Paris Palais de Justice for the general inspiration of his design. The design shows an Ionic order in the centre block, with a Roman Doric order in the wings; the whole treated in a simple and even stern manner suitable to the proposed object of the building. The plan is symmetrically arranged and fairly good, but the public entrance to the courts is much too near the main street entrance. Another application of Classic architecture is seen in a design by M. Hélrard, "Projet de Temple Protestant." This is a building in the general form and proportions of a Roman temple, but with large arched windows at the side, and a circular end window with a cross worked into it as a form of tracery. There is something in the idea which is not unsuitable to a church for modern Christian worship. A "Projet du Théâtre" prepared by M. Schmidt for some "société des bains de mer," the name of which is not given, shows a good Classic design of rich type, the auditorium and stage portion sufficiently distinguished externally; the dome-like roof of the former is treated with coloured tiles in a manner evidently derived from M. Formigé's domes at the Champ de Mars; the carved masks on the balustrade are a good deal too large for the rest of the detail (another example of the neglect of scale). A "Salle de Concert" at Zurich is exhibited by M. Meyer. This looks much more like an ideal than a real scheme, but it has merit. A competition design for a great railway station at Bucharest, by M. Farge, is worth a note, for the bold manner in which the author has expressed, in the three great arches and gables of the front, the interior laying out and roofing of the station, and for the absence in the design of any unnecessary or claptrap ornament. The design by M. Letrosne for a "Phare Électrique et Sonore," *i.e.*, an electric lighthouse with fog signals, is creditable to the author, and the principal elevation is rather fine and impressive, though the details, powerful but coarse, are for the most part not much better than we might have expected from an engineer. Another design that is worth attention is that by M. Berger, for the decoration of a public place. This consists of elevations, on rather a small scale, and very carefully drawn, of the various buildings on each side of the supposed "place;" a classic Hôtel de Ville with a large dome, a lower block of buildings for the flanking sides, and semi-circular colonnades with an arch decorated by a quadriga, which we may presume forms the approach. There is a great deal of good architectural quality in this set of drawings. A design for a bridge, by M. Rives, has evident relation to the possible formation of new bridges over the Seine in connection with the 1900 Exhibition; this is rather a successful design for a Classic pavilion and fountain in the centre of the river, with iron bridges with covered verandahs, and a good deal of coloured decoration, connecting this on each side with stone pavilions on the banks, of similar architectural character to the central one. Another very interesting exhibit is a small and very delicately-finished water-colour drawing, by M. Mitsch, showing what he calls the "synthèse esthétique d'une ville lagunaire idéale," and consisting of a series of small coloured elevations of various buildings standing by the side of water. In this, too, there is no doubt some intention of hinting that the author would understand how to group temporary buildings along the Seine in exhibition time: but the drawing is so small and delicate that it is nearly lost among the drawings on the average Salon scale. We ought also to mention M. Mewes's design for the rebuilding of the Opéra-Comique, which is refined and reserved in treatment, and shows some originality in the application of carved ornament and sculpture.

A large and important decorative drawing is exhibited by M. P. J. E. Deperthes, showing an interior perspective of the "Salon des Cariatides" at the Hôtel de Ville, with the decorations painted by M. François, Flameng. The Caryatides which give the name to the apartment stand on the piers of the gallery balustrade and appear to support a part of the beams of a coffered ceiling. The room shows an order of columns in the lower portion; the lunettes in each bay are painted with very graceful groups of figures; in the spandrels the decorative effect is rather spoiled by the large "swags" painted over the smaller decoration; but the whole effect of the room is good. A very good bit of decorative design is exhibited by M. Labreux, a mural decoration for a room, divided into panels in which figures and foliage in low tints inclining to yellow are painted on a faint grey ground in the centre and a darker ground at the margins; the effect of the whole is very refined. In the gallery occurs a drawing of a ceiling decoration by M. Gilbert, showing the upper portion of a Classic order and entablature seen as if looking up at it from below, and a blue sky and clouds above the balustrade. We thought this kind of thing was obsolete, even in France. M. Destombes exhibits the drawings for his monument to Nadaud, a model of which stands in the centre of one of the architectural rooms: the centre portion, crowned by a pediment, shows the bust of Nadaud in alto-relief, with a composition of muses or other ladies singing and playing below, in lower relief; the sides are flanked by curved wing colonnades. The general effect is good, but the details are not remarkable, and the finials with grotesque busts at the angles are very ugly. There are two or three other monument designs scattered about, of which the most noteworthy are a tomb designed by M. Lafargue; a water-colour drawing of the Testelin monument, exhibited by M. Bonnier (the designer of the architectural portion of the monument), and a pretty and interesting sketch of a "Petit campo santo," at the cemetery of St. Germain. This is a small-walled enclosure, with a pedimented block in the rear, decorated with coloured marbles and emblems, the front closed with cross-barred gates and railing in the Roman style.

As usual, in the two classes of churches and private houses the exhibits are very unsatisfactory to the English eye. The church in course of erection at Vigny, exhibited by M. Tubeuf, with its immense projecting balcony at the base of the spire, is something awful and incomprehensible to the English mind. One does not know where the French get this kind of Gothic detail from, of which there are other examples as flagrant. In "Eglise pour un village de Lorraine" M. Berger shows us a kind of Classical church with semicircular clearstory windows with radiating tracery bars, which remind one more of a railway station than of anything else; and this for a village church! In the matter of houses, the French city "Hotel," or "maison à loyer," is a good type of town architecture, and there are several typical examples of it here, shown in large and fine drawings. The drawback to this class of French street architecture is the exceeding sameness of the type; after you have seen one or two you have practically seen all, for they vary in no important degree; everywhere there are the same balcony-railings, the same corbels, the same bits of sculpture over the doors. Still, it is a good type of house architecture of its

class. It is when the French architect gets hold of a country house that he shows at his worst. The unostentatious picturesque seems unknown to him. A country-house is marked by gewgaw woodwork and immense spiky finials at the gables. The climax is reached by M. Tronquois in his "Projet d'Habitation Suburbaine," for which he ought to have stones thrown at him; it is a kind of thing that sets one gasping for breath to utter one's feelings. Among a few redeeming things in domestic architecture may be mentioned the villa in the Italian style, designed by M. Vallette for the Comte de B——; and the "Hôtel de M. Geraud" at Passy, by M. Pergod. This is a simply-designed brick house, with a corbel cornice at the eaves; it is noticeable that on comparing the photograph of the house with the perspective drawing, we see that the stone corbels as actually carried out have been simplified from the original design, with manifest improvement.

The Exhibition contains a good many drawings of old work, concerning which we may say that the frames of small sketches—travelling sketches—are in general not so good as those which our English sketching architect would bring home; but on the other hand the large and highly-finished drawings of old work which are to be seen here and there on the walls (in addition to some we have already mentioned) are superior to anything of the kind we are accustomed to see in England. We may point especially to the geometrical coloured drawings of the curious Calvaire and cemetery chapel at St. Thégonnec (Finisterre), a naïve piece of Early Renaissance work, the drawings of the Church of St. Maria dei Miracoli by M. Totten (an American by birth), and the splendid coloured drawing of the portal of the Church of the Convent of St. Leonardo, at Pouille, in Italy. This is a remarkable monument, in which common forms of what we call Norman ornament (hatchings and lozenges) are mixed with beautifully-carved capitals in almost pure Byzantine style; the whole shown in a very large water-colour with almost the verisimilitude of reality.

Among the château-restoration drawings, which are not quite so numerous as usual, M. Girette's restoration and enlargement of the Pavillon Sevigné, at Vichy, is really interesting, and illustrated in a very good set of drawings. But the most interesting set of drawings of this class are the sketches and partial restorations by M. Girault of the ancient chateau of the Ile d'Yeu, off the coast of La Vendée. M. Girault has added a manuscript memoir as to this remarkable relic of a great Mediæval stronghold erected on a rocky island, of the probable former state of which he has endeavoured to give some indication in his sketches.

The architectural exhibits at the New Salon, as already hinted, need not detain us long. There is a very good exhibit by M. Benouville in the shape of a full-size model and sections of a billiard-room recess and ceiling; in the recess there is some pretty decorative stained glass of rather unusual type. M. J. A. Besnard exhibits a fine set of drawings of the abbey church at Boscherville. Some of the other things that force themselves on one's notice are sheer absurdities. M. Guillemont shows a design for the 1900 Exhibition with the upper three-fourths of the Eiffel Tower cut off and the lower portion made the footstool for a gigantic gilded globe of the earth. M. Garas provides for a "maison de retraite" in the mountains for an artist, musician, and painter — after he has lost his reason, we presume, for it is one of the maddest things we have ever seen. M. Roy's drawings and restoration of the chapel of the Château of Rambouillet are interesting; this is a small chapel with the peculiarity of a central arcade dividing it into two aisles. M. Vincent shows some drawings of a curious little church in Corsica (St. Christina, near Cervione) with a double apse at the east end. M. Plumet shows drawings with a model of the front of a Paris mansion (there seems to be much more favour shown to models at the new Salon than at the old); and M. Baudot gives drawings of part of the Lycée Victor Hugo at Paris, which are good in a practical sense, but look (like Paris Lycées generally) more like a railway station than a school. French modern school building is absolutely devoid of the domestic element in its architectural treatment. There is a certain amount of decorative work: a large stained-glass window representing a boar hunt, carried out by M. Gaudin, from the designs of M. Grasset, with a very brilliant and sparkling effect, but utterly undecorative in its lines; a pretty piece of bath-room decoration, shown on the walls of a built-up room, by M. G. Morren; and various designs for wall-papers and textiles, by M. Aubert, which are not in bad taste, but which to an English mind are extraordinary in their weakness and want of all breadth or power of design. They would not even take a medal at the "national" competitions at South Kensington. French designers should make some acquaintance with the best paper and textile designs of Mr. Morris, Mr. Crane, and other English designers: they would perhaps then realise how absurdly they are in the rear in this department of artistic work.

NOTES.

THE Exhibition of the Art of Ancient Egypt at the Burlington Fine Arts Club is on the whole more interesting in an archæological than an artistic sense. The pottery exhibited is of a very simple kind, and does not present any special attractions in design. The catalogue or the numbering, in respect of this portion of the collection, seems to have been rather carelessly done, as some at least of the numbered articles of this class do not correspond at all to the descriptions in the catalogue. In Case D we may admire the fine conventional treatment of the small hawk carvings in chrysolite, and the remarkable spoon (37) with a broad open-work handle in which is carved the figure of a dancer. This is a fine object and worth the study of designers. In Case I is an interesting and nearly complete example of the peculiarly uncomfortable Egyptian pillow, an alabaster open ring or hoop for receiving the head, mounted on a vertical stand or pillar. In Case O (No. 14) is a rather remarkable necklace of blue faïence, the main design consisting of very naturalistic flowers strung together along with beads. Some of the glass is interesting, though it does not present any forms that are not familiar. The most interesting portion of the exhibits by far, from the artistic point of view, are the gold ornaments and jewellery in Case S. The greater portion of this is of late date, but there are some more ancient examples, and some of these are very piquant and interesting. One point which some of the gold necklaces illustrates is the effective manner in which plain chain-links may be fashioned and intertwined; notice especially No. 7 in Tray A, and Nos. 77 and 89 in Tray E. Some of the forms taken by the details of necklaces are exceedingly interesting and suggestive for designers. No. 98 (Tray F) is one of these; a necklace of gold and amethyst beads, four drops in the shape of shells, three drops of cornelian and lapis lazuli. The chain portion of the necklace is formed by little squares of gilt metal or gold, like miniature gridirons, which have a very characteristic appearance. Both in Egyptian and Greek work of this class one may notice what a good effect is obtained from stringing together in a perfectly loose and flexible manner forms which in themselves are square and formal. A good many other articles in this case are excellent and unusual in design, and are worth the study of those who can obtain entrance to the exhibition, which is readily granted to any who are interested in the subject. The collection contains, within the small compass of the well-known room at the club, an immense number of objects of various kinds, but as we have said, the majority have not any special artistic value.

LORD ROSEBERY'S speech at the Royal Academy banquet was certainly not in the spirit of a Minister of the Crown: it was much more that of the critic than of the administrator. He spoke, he said, as "an irresponsible dreamer of dreams," and these dreams were of the day when the State would commission eminent artists to paint portraits of eminent living men. "You will never," said the Prime Minister, "have a satisfactory portrait-gallery unless you are able to give commissions to living painters to paint living men." To commemorate history in this way is admirable—in a dream—but it must be confessed that the idea of a Government department giving orders to artists to paint important personages is not one which can ever be realized. We much doubt, indeed, whether the result would be satisfactory. The Treasury would scarcely allow fees which would compensate the leading artists of the day, and a new Department would have to be organised to consider the claims of those who might consider themselves entitled to a place in this Valhalla. The building is not planned which would hold the portraits which a Department, urged on by ardent politicians, would purchase from second-rate artists. After all, time sifts the wheat from the chaff in public life, and with due deference to the Prime Minister, the country has a truer national portrait gallery, by obtaining portraits of men who in due time have become recognised as historical characters, than it would have if a Government official ordered the portrait of every man of the day who, in his opinion, was liking to become historical.

AN exhibition, passing under the name of the "International Health Exhibition," is now open in Manchester, and, if we may judge by the crush there when we visited it, is at least popular. We noticed, too, that besides the usual crowd of gay sightseers, there were many "horny-handed sons of toil" who examined the specimens of plumbing, &c., with evident interest, and with an eye to their own improvement. The exhibition may, therefore, prove to be not only a commercial success (which is, we imagine, its primary object), but also (and this is of higher moment) an object-lesson in sanitary science. A committee, consisting of representatives of the "Manchester and Salford Sanitary Association" and the "Manchester Council for the Registration of Plumbers," has had almost sole control over the selection of exhibits; and while there are, of course, several stands which have no special right to appear at a "health" exhibition, yet, on the whole, the committee must be congratulated on having obtained a display covering a considerable part of the wide field of sanitary science, and forming a valuable museum of reference in elucidation and continuation of the three-days' conference on "Sanitary Progress and Reform" recently held in the Manchester Town-hall. The exhibits (neglecting those which have no special connexion with health), range from drain-pipes to disinfecting fluids; from baths, lavatories, and water-closets, to tanks for sewage treatment, and from cooking-stoves to cremation. The Manchester Corporation exhibits drawings of the Holt Town Sanitary Works, and models of the Manchester receptacle closet, with side cinder-sifter, &c.; particulars are given of the manufacture, from the contents of the pail-closets and other refuse, of grease, soap, disinfecting powder, manure, &c. A somewhat similar exhibit is that of the Health Committee of the Rochdale Corporation, illustrating the Rochdale system of refuse and sewage treatment. One of the most interesting stands is

that fitted up by the Sanitary Engineering Department of the Manchester Municipal Technical School; here may be seen models and appliances of various kinds, including sections of water-closets and traps, different sorts of ventilators, and a working model of the hot-water system of a house; the last includes a copper boiler (heated by a Bunsen burner), a cylinder, cistern, and glass pipes with brass connexions, but no safety-valve; examples of defective plumbers' work are also shown. An extremely useful exhibit is that shown by the Manchester Council for the Registration of Plumbers; it consists of "a house" with all the necessary water-fittings and sanitary appliances fitted complete, all full-size; everything is provided, kitchen-range and boiler (the latter fitted with an ordinary dead-weight safety-valve), cylinder, cistern, hot-water coil or towel-rail, bath, lavatory, water-closet, sinks, &c.; all pipes are in sight, and are of lead fixed with ornamental clips; the traps are ventilated; and, as water is turned on, the fittings can be tried at will; altogether an excellent and instructive example of plumbers' work. Space forbids us to do more than mention other exhibits. Some of them, such as those of the Albion Clay Co., J. Duckett & Son, and Shanks & Co., were noticed in these columns in connexion with the recent Building Trades Exhibition in London. Shanks & Co.'s "Tubal" or "Instanter" school lavatories may be mentioned as an interesting novelty, and their "Syphonic" closet fitted with Lightfoot's "Unity" cistern works well, and is certainly proof against syphoning, having 8½ in. depth of seal. Attention may also be drawn to the interesting displays of the "Loco" Draining Apparatus Company, Limited, W. Ingham & Sons (fire-clay goods), Mooney and Co. (baths, &c.), and the Sanitation Improvement Co. (Stafford closet, with tipper).

ON Thursday in last week Professor Unwin delivered a lecture before the members of the Institution of Civil Engineers on the "Development of the Experimental Study of Heat Engines." The lecture formed one of the series instituted at the desire of Mr. James Forrest, and illustrated how largely the work of the practical engineer depends on the researches of his more theoretical brethren. The first serious attempts at improvement in the steam-engine were made by Watt in the beginning of this century, and later by Trevithick and Grose, and the time which has since elapsed has been wholly occupied in applying their principles, no new theories having been advanced in the interval. The impetus given by Watt by standardising the duty of his engines, caused Joel Lean and other engineers to persevere until the duty was increased from 7 millions to 107 million foot pounds. We are indebted to Josiah Parkes, however, for the first scientific trials of a boiler apart from the engine, but it was not until the Mulhouse trial in 1859 that the importance of the air supply and chimney waste was recognised. Although expansive working was patented by Watt, he made no use of it, and it is to the discoveries of Regnault, connected with the physical properties of steam, that we are indebted for the first reliable information on this portion of the subject. Joule's discovery of the equivalence of work and heat caused the study of thermodynamics to receive much attention, and in a few years Rankine, Clausius, and Zeuner had built up rational theories. Great discrepancies appeared, however, between their calculations and experimental results, since they overlooked the evil attending all steam-engines, namely, cylinder condensation. Hirn's experiments demonstrated the great influence of steam-jackets, but, as Professor Unwin pointed out, the jacket becomes of less use as engines are better designed; it lessens the evil but does not remedy it, and it is to superheating which we must turn if we require still greater economy in the steam-engine.

THE current number of the *Geological Magazine* contains an interesting article by the Rev. E. Hill, on the destruction of the church tower of Eccles-by-the-Sea, by marine denudation. That part of the Norfolk coast is protected to some extent from the ravages of the sea by a long line of sand-dunes—low hills formed by the action of the wind. These "travel" inland, the sea-breezes blowing the loose sand before them, but the rate of progression is very slow. In the course of their movement the sand-dunes bury anything which comes in the way, and Sir Charles Lyell states that by the year 1839 the church above-mentioned became involved; his illustration shows the tower emerging from the centre of the line of sand-hills. Returning to the spot in 1862 he ascertained that the tower was nearly free of them on their seaward face, at a distance from their centre about equal to its own height. In other words, he found that the sand-dunes had travelled inland about 40 ft. in twenty-three years. Mr. Hill, on going to the place in 1893, noticed that the line of hills was entirely separated from the tower, and from measurements taken he found that the dunes had advanced about 90 ft. in fifty-four years. The strip of land between the church and the sea, being deprived of its line of defence, however, rapidly succumbed to the action of the waves. In 1893 the foot of the tower was about thirty yards from neap-tide high-water-mark, and its level scarcely 4 ft. above; Mr. Hill remarks that spring-tides must have nearly or quite reached it. In November, 1893, a gale bared the foundations of the church, and the opportunity was taken to make plans of the same. On January 23rd of the present year another storm arose, which brought down the tower, and practically destroyed the whole edifice. When this church was built, there must have been quite a broad stretch of land between it and the sea; but the rate of denudation along that and many other parts of the East Anglian coast is so rapid that in course of centuries, whole towns have disappeared. It is not the first time that Eccles has suffered from these encroachments, for in 1605 hundreds of acres of land, with sixty-six houses and their inhabitants, were swept away in one night.

A REPORT has recently been made by Mr. Evan Evans to the Local Government Board upon the General Sanitary Condition of the Festiniog Urban District in the north-western portion of Merionethshire. The physical characters of the district present points of considerable interest, and give rise to conditions of peculiar difficulty in connexion with drainage and dwellings. The district is for the most part mountainous, rocky, bare, and intersected by deep valleys. The whole area lies on the Cambrian formation, and occupies the south-westerly slope of the denuded edge of the great Merionethshire anticline. A series of terraces have been formed by the unequal weathering of strata of different degrees of hardness, and since the strata have a considerable dip to the north-east, it follows that behind their edges depressions have been formed in which water accumulates, and drainage works are necessary to prevent the constant saturation of the subsoil with water. An excessive rainfall is one of the chief characteristics of the district. A fall of 99 in. of rain has been the average for the last ten years in the immediate neighbourhood of Blaenau. Such a large amount of rain falling on precipitous slopes is a continual source of nuisance through the production of dampness in dwellings. The streets are everywhere in a neglected condition. There is hardly anywhere any proper channelling, and the footpaths are almost invariably unpaved. The available yard space for the houses is often very limited, because houses have been built on narrow terraces on the rocky and precipitous mountain sides. Many of the older houses have been built against the bank. The dwellings that have been erected during the last twenty years are mostly stone-built five-roomed houses, well constructed and ventilated, and are also generally provided with a fair amount of garden space. Unfortunately, no provision has been made to protect their foundations against damp This damp condition of dwellings is the more easily brought about in consequence of the almost universal practice of utilising large stone flags from the neighbouring quarries for purposes of flooring. Moreover, even in regard to some of these newest dwellings, leaky culverts for the conveyance of slop-water and of rain-water from roofs and yards were observed to have been placed close to the foundations of the walls. Several of the streets, too, have been built on an imperfectly-drained bog. In the parts of the district provided with sewers, water-closets are in general use; and as regards the majority the Authority have recently enforced the use of flushing-cisterns. For the remainder of the district, the old-fashioned privies have to a large extent been replaced by pails, which are removed at weekly intervals in a properly-covered van by a contractor under the Sanitary Authority, and deposited on an open space at a safe distance from dwellings at Cefn Trwsgl, where the contents of the pails are mixed with house refuse and gas-lime. But the houses on the banks of the Barlwyd have a large number of privies which are erected over and discharge into the stream. Other privies are built over small rills, with at ordinary times an insufficient volume of water passing through them to effectually remove the excreta. In summer these rills are often dry, and the "water privies" at such time become a serious nuisance, while a still greater nuisance is produced by them after heavy showers of rain, when the excrement accumulated beneath them is swept into the immediate vicinity of dwellings. General results: presence of phthisis, puerperal fever, and diphtheria, attributed in the Report mainly to conditions of lodgment—cold and damp dwellings, and sleeping-rooms deficient in lighting and through ventilation.

IN the course of this month wil be offered for sale the engineering works and mint, with all plant and machinery, of Messrs. James Watt & Co., being the well known Soho Foundry, at Smethwick, near Birmingham. The Soho Works were founded in 1757, Matthew Boulton removed thither from Snow-hill, Birmingham, in 1762; he re-built Edward Ruston's mill and house, and speedily made a reputation for his improvements in the industrial arts; within ten years he employed nearly one thousand hands; and the brothers Adam built for him a show-room in London. In 1775 he was joined by Watt, for whom he had taken a house, Regent's-place, Harper's Hill. New forging shops were erected at Soho for the making of steam-engines. In 1786 the firm began their subsequent extensive mintage operations by coining 100 tons of copper for the East India Company. Six more presses were added in 1788, the eight being equal to coining 1,200 tons of copper per annum. In 1797-1806 they coined 4,200 tons of copper for our country, besides supplying France (in 1790-92), the American colonies, Sierra Leone, &c. They also made minting machinery for various foreign nations, and for the Mint on Tower-hill, where one of their presses was in use until thirteen years ago. In 1800, their two sons having already entered the firm, Boulton and Watt dissolved partnership. Boulton died in 1809; Watt, who retired to Heathfield (where his garret workshop has been preserved as he left it), survived him, and died on August 19, 1819. Both are buried in Handsworth Church, where is a monument to Watt by Chantrey, sculptor, too, of the incongruous statue in St. Paul's

Chapel, Westminster Abbey, bearing an inscription by Lord Brougham. Soho Works were first lighted by gas in 1802 by Murdock, who was in their employ.* No vestige remains, we believe, of the old Soho Mint, which was dismantled in 1850, when its machinery was sold. The present firm constructed a fresh mint in 1863 for making the new British bronze coinage. Murdock when in their service invented the oscillating engine, and the sliding eduction pipe, modified as the long-D slide valve to replace Watt's four poppet valves in a double engine. He also has been credited with the eccentric. When Boswell visited Boulton he had more than seven hundred men, all engaged, as he said, for the selling of what all men want—power.

IT is well that the older works at the exhibition of "Fair Children" at the Grafton Gallery are grouped near the entrance, for few would give them very much attention after looking at the modern works. The ancient portion, it must be confessed, is not very representative. But among the paintings of the present and recent times are a number of beautiful pictures of children, some of them well known, and which we are glad to see again, others which are equally good and less known. Among them, Mason's "Girls dancing by the Sea" comes as a dear old friend (unfortunately hung in a very bad light). Sir J. Millais' world-famous boy blowing bubbles is there, and Mr. Hacker's splendid portrait of "Master Hoare," seen not long since at the New Gallery, Sir J. Millais' "Orphans," with that wonderfully-painted rabbit, and other fine child-pictures by Sir F. Leighton, M. Carolus Duran, and Mr. Watts. One of the best things there is Hoppner's "Edward, fifth Earl of Darnley," a beautiful little boy in a dark blue dress with red cuffs. Among the objects that should not be overlooked is Webster's remarkable picture, "The Playground," old-fashioned in style, but displaying an amount of variety of expression and character among the crowd of figures, which is very remarkable.

THE state of matters in regard to the Works Department of the London County Council is obviously unsatisfactory, and it is doubtful if the debate in the Council on Tuesday last will tend to give the ratepayers of the Metropolis confidence in this particular department. That there has been an undoubted increase in the cost of various pieces of work is clear; and it is equally clear that there is a divergence of opinion among the responsible persons on the subject. The Manager of the Works Department tags the blame on the too great strictness of the architect, but after the vote of the Council on Tuesday approving of the conduct of the architect, it is obvious that he must be regarded as having acted strictly and properly in the execution of his duty. The chairman and vice-chairman of the Works Committee seem to be equally at variance in their views. We should be sorry without an exhaustive examination of all the details of the various pieces of work which have been undertaken to say how the excess of cost over estimate arises. But there can be no doubt that the Works Department did not commence its labours in a business-like manner. It was set going in an amateurish and not in a business spirit. The majority in the late Council appear to have been under the impression that they had only to set up a Works Department, and to authorise it to undertake every kind of work, to have the cost of contracts lowered, and the workmen of the Council pleased by abundant wages. The proper way to inaugurate a Works Department was to authorise it to get under way by degrees—to undertake smaller kinds of work in the first instance, and to proceed tentatively, and in an experimental spirit. We are much inclined to think that the limits within which a Municipal Corporation can satisfactorily be its own contractor are narrow. At present the County Council appears to be discovering these limits, but not without considerable cost to the ratepayers of London.

* It is amusing to read that when the House of Commons was to be thus lighted, the pipes were fixed several inches from the wall, it being popularly believed that the gas was carried through the pipes in a state of incandescence.

THE result of a small competition which has just been decided, for cottage homes and schools at Styal, Cheshire, raises a question, to which our attention has been drawn by more than one correspondent, as to the proper and logical procedure to be adopted by an assessor in respect to designs which, with whatever general merits, do not comply with the conditions. The assessor in this case was Mr. Macvicar Anderson, whose fairness and impartiality in such an office are of course beyond question; but we do not understand his logic. He recommends for the first premium the design signed "Snowflake," as to which he says in his report (a copy of which has been forwarded to us) that he has no hesitation in placing it first, but adds, "it is extremely unfortunate that the author provides accommodation for 286 children only," instead of the 300 which the conditions of the competition demanded. Surely this was a reason for disqualifying the design altogether. The first business of a competitor is to take note of and to comply with the conditions and requirements of the programme; the first business of an assessor is to put aside and disqualify the designs which do not comply with the conditions. No other course is fair to the other competitors. What are the conditions for? To recommend a design which does not conform to them, however meritorious it may be in other respects, is surely a very illogical procedure.

THE ROYAL ACADEMY EXHIBITION.

A MORE careful examination of this year's paintings leads to the conclusion that this is a more interesting exhibition, from an artistic point of view, than we had realised at first glance, though there is no very great work to be found in it, and though some eminent painters are hardly at their best. Among these is Mr. Watts, whose "Jonah" (147) is a very unattractive picture both in design and colour, though this conception of the prophet, as a kind of raving fanatic, has an intellectual interest as in accordance with historical probabilities. The figure at once suggests a parallel with Solomon Eagle, the prophet of the London Plague; an association which we observe also occurred to the critic of the *Times*, who had the opportunity (*pereant qui ante nos nostra dixerunt!*) of getting it into print first. This is one of the cases which suggests the consideration whether it is worth while to paint an ugly picture for the sake of historic truth, as to which, in the Vicar of Wakefield's formula, "much may be said on both sides." Mr. Watts's "The Outcast," namely "Goodwill" (258), a rosy naked little child by the roadside, is also rather more interesting from the moral than the artistic side; it is not one of the painter's best children.

Every one will be glad to find our greatest portrait-painter (may we not say our greatest painter) reminding us that he is much more than a portrait-painter; we only wish he would remind us oftener. "Speak! Speak!" (251) the ejaculation of a bereaved husband to the vision of his late wife which appears at the foot of the bed, forms the title to a picture characterised both by dramatic energy and powerfully contrasted effect of light and colour. It has been objected that the ghost returns to earth very well furnished with diamonds, but that is hardly a scientific criticism; the apparition is the reflex image conjured up in the man's brain by an imagination excited by the study of her letters (that seems to be the story), and it is perfectly in accordance with probability that the image should take the form of apparel in which, perhaps, her beauty had made the strongest impression on his memory; what the painter is depicting is no idea of a personal visitation of the dead, it is the reflex image of the man's brain made visible to the spectators. There is, therefore, nothing illogical in the diamonds, which add immensely to the pictorial effect of a work which, both in regard to artistic power and sentiment, grows upon us as it is studied. Of Sir John Millais' other exhibits, "A Disciple" (166) is singularly beautiful in its fervid expression. "St. Stephen" (18) is hardly such a success as the others; it is a rather prosaic conception of the dead saint; it is not an "effective" picture, though it must be admitted to be a pathetic one. Sir John also exhibits a very solid and finely treated portrait of a lady (331).

The President's central work, "Flaming June" (195), represents a large sumptuous woman in bright red drapery, asleep in a somewhat contorted and doubled-up attitude, on a stone bench; there is a great style about it, the drawing is fine, the combination of colours in the accessory draperies is a feast to the eye; the jarring note is in the brassy-looking sea in sunshine beyond. The less landscape there is in Sir F. Leighton's paintings the better for them. The smaller painting, "Lachrymæ" (182), a woman leaning in the dusk over a funeral monument, is a more perfect though much less striking work than the last-named. The half-length of a young girl, "The Maid with the Golden Hair" (139), is marred by the blank, colourless character of the face.

Mr. Poynter and Mr. Alma-Tadema each send one work, the two being, as usual, hung near each other, and forming a kind of rivalry in the revival of classic architecture and decoration and classic figures. Mr. Alma-Tadema's "Spring" (262), a larger work than usual with him, is one of his most brilliant representations of Roman architecture, and is marvellous in the elaboration of some other details—notice the silver flute played by the figure in the foreground, its details would almost bear a magnifying glass; the crowd of figures and flowers has a most brilliant effect. Mr. Poynter's marbles and architectural details in "The Ionian Dance" (270), though most learnedly drawn and coloured, look somewhat cold and wanting solidity by the side of Mr. Tadema's splendid marbles; the trees seen through the windows, too, are rather flat in appearance; but the figure of the dancer in the centre is one of the most graceful and delicate things we have ever seen in modern painting, and is perhaps, in the matter of beauty, the object best worth looking at in the whole exhibition. Such a figure as that outweighs in value any amount of marble painting; it is really alive with graceful movement.

Mr. Briton Riviere has made a great success with his painting of "Phœbus Apollo" (160) mounting a crocus-covered rise of ground in a chariot drawn by lions (we always considered that horses were the recognised draught cattle of Apollo). The picture is full of energy and vigour, in the attitude of the god and the action of the lions, one of which turns its head and roars in answer to his exhortations; the car is a curious and interesting study. The weakness of the work is in the clash between realism and poetry—the man, and the animals, and the mechanically-designed chariot, are so very material that we half look for the sawdust on the floor and a ring of spectators in the background. However, as a piece of forcible and vigorous design, the picture is well worth looking at, by whatever name we call it. Does not Mr. Calderon's "Ariadne" (210) also fall short as a poetic conception? A charming woman in some trouble, wading into a blue sun-lit sea, it is pretty and touching, but hardly poetic or tragic. In connexion with such a subject, one cannot accept mere beauty of colour or handling; we want an adequate ideal of the great Greek romance of love and desertion, and we hardly get it here. On the other hand, Mr. Swan's little picture, "The Goat Herd" (208), is one in which colour and treatment are everything. There is no "story" here, only a figure of a youth seated by some battered remains of Doric columns, with his goats, slightly indicated, in the foreground. The picture is a little vision of colour and composition which is complete in itself. "Tigers at Dawn" (314) is Mr. Swan's other contribution, also excellent in its way. In the Sculpture Room (of which more on another occasion) is to be found a little translation into bronze of his painted figure of "Orpheus," on the inadequacy of which as a conception we have before commented. Miss Rae's "Apollo and Daphne" (621) is another classical subject disappointing and prosaic in conception, nor is it equal in execution to some previous works by the same artist. Mr. Hacker treats the subject of "Daphne" (315) as a nude study somewhat similar in style to another rather recent work of his; a very good study, but one is irresistibly led to think of Mr.

Watts's "Daphne," and to feel this as a very weak reading by comparison. Mr. Jas. Clark's "Parable of the Ten Virgins" (602), though not a remarkable picture, has a great deal to recommend it, both in colour and composition. Mr. Solomon has produced one of the best ideal pictures of the year in his "Echo and Narcissus" (770), half-nude figures grouped at the edge of the pool into which Narcissus is gazing, while the nymph gazes up at him, apparently in a half-swoon; her face and expression are very beautiful, and both figures are very carefully studied; we should call this the best work Mr. Solomon has produced. If we turn our back on this picture we see, in the distance at the end of the vista, in the corresponding position on the wall of Gallery II., a picture of Gothic ideal, Mr. Waterhouse's "St. Cecilia" (97). As an illustration of the passage quoted from Tennyson's "Palace of Art" this is unsatisfactory; the effect of serene and bright atmosphere implied in the poet's beautiful expression, "a clear-walled city," is not there, and this faded woman with lank hair is a weak conception of St. Cecilia. "An angel looked at her" is translated into two angels, also with lank reddish hair, playing on old-fashioned violins. It is a composition permeated by Mediæval fancy, and as such a beautiful one in regard to colour and feeling; but it is as far from the picture of Tennyson's conception as anything well could be, and by unnecessarily quoting the poem the painter has forced the contrast upon us, not to the benefit of his work. Painters should either let great poets alone, or endeavour in earnest to interpret their conceptions. Apart from this the work is a fine and interesting one, though, as observed, we think it is a weak conception of St. Cecilia. Mr. Richmond's painting, "Aphrodite between Eros and Himeros" (569), is very agreeable in a decorative sense, but is not nearly so interesting and effective a picture as the "Persephone" in the New Gallery, which we accidentally omitted to notice in our article of last week.

Among the pictures drawn from subjects of real life (other than those already mentioned) Mr. Stanhope Forbes takes the lead with his large and exceedingly effective picture "The Smithy" (372). The painting of the horse, seen under the strong but partial light of the forge, the interior effect generally, and the manner in which the subdued effect of exterior daylight through the half-opaque window-glass is conveyed, are all admirable, and in pictorial quality this is perhape the best work that Mr. Forbes has produced. Yet it must be admitted that in regard to the study and realisation of human character, which is a higher and more difficult task than the production of pictorial effect, Mr. Forbes has never yet equalled the first picture which really made his fame—"The Health of the Bride." However, this work of the present year is a really striking one in its way. Mr. La Thangue's large painting "The Last Furrow" (98) is more on the scale of the Salon than the Royal Academy, and is certainly not properly to be seen in Gallery II., and we can only say that judging of it as hung it does not appear interesting, but it might vindicate itself better in a larger space; it probably suffers in effect too from its large spaces of necessarily rather dull colour being opposed to the rich colouring of Mr. Waterhouse's work which hangs beneath it. Mr. Frank Dicksee's "A Reverie" (46), which introduces us to another apparition of a deceased wife (or is it a former love? the man seems hardly old enough to be the father of the lady at the piano), is a kind of picture the public delight in, and we do not deny the ability displayed in it, but the sentiment is of a very commonplace order; and in "Paolo and Francesca" (171) the same painter has succeeded in completely vulgarising Dante's lovers; another instance of the way in which great poets are made the prey of painters who do not understand them. Mr. Clausen's "Harvest" (91) has power both of colour and action, his "Farmer's Boy" (121), also very clever, is rather *too* palpable an imitation of the manner of Millet. "A Sailor's Sweetheart" (183), like "A Reverie," is a kind of painting dear to the British public and to their illustrated journals, and no doubt Mr. Marcus Stone provides very adequately for this class of amateurs. Mr. Herkomer's very large painting, "The Bürgermeister of Landsberg and His Town Council" (436), which, as already observed, adds another room to the Burlington House suite, is a capital specimen of the *genus* "Presentation Picture," and is in fact quite above the ordinary level of such works; the style of handling is broad and massive, but nothing is neglected—the furniture, the design of the ceiling, the light through the blind drawn over the centre window, are all as carefully treated as the heads of the rather rough-looking but practical town councillors, who seem to harmonise so well with the rather naïve street architecture seen through the window. The artist has succeeded in making the picture interesting to others than those in whose honour it has been painted, which certainly is not always the case with presentation portraits or groups. Mr. John Collier's "Death of Albine" (589), a heroine of Zola's, is a picture of a dead girl lying on a couch amid a mass of flowers, the face very beautiful and very finely painted; the whole work shows a degree of tenderness of feeling which is not generally characteristic of this artist's work. Mr. Bacon's "Suscipe me, Domine" (556) is a more important subject than the two pictures with which he attracted so much attention a year or two ago, but it hardly bears out the promise which they gave.

Among smaller figure-pictures is Mr. Arthur Hughes's "Dreamland" (760), a child asleep in the woods, in that beautiful half-ideal light and colour in which this artist bathes his scenes; but this is hardly Mr. Hughes at his best. Mr. Dendy Sadler, in a very different vein, is quite at his best in "An Offer of Marriage" (776), an admirable study of character. Other pictures to be looked at are Mr. F. D. Millet's "An Overture" (134), a delightful bit of humour combined with capital painting; M. Bouguereau's "Baigneuse" (243), an excellent piece of academical figure-painting; Mr. Yeames's "Defendant and Counsel" (309); Mr. F. Bramley's "Sleep" (471), as a curious experiment in colour; Mr. Walter Langley's "Motherless" (798); Mr. Tuke's "The Swimmers' Pool" (812), and Mr. Melton Fisher's "Vanity Fair" (844), the interior of a silk-mercer's shop, an interesting study in colour and composition in this artist's peculiar way. Mr. Albert Goodwin's "Christian leaving the City of Destruction" (337), is a repetition of that same kind of mystic aërial architecture on a great scale, which he showed us last year in "Christmas Eve;" it is not quite a success, and the "City of Destruction" reminds one rather too much of the Crystal Palace; there is a fine effect in the indication of the light of the heavenly city on the lofty peaks above.

The exhibition contains, as usual, several military pictures, of which three are important and successful works. Mr. Crofts's "Napoleon's last grand attack at Waterloo" (499) has all his usual merits in the treatment and grouping of bodies of troops, but the point of interest in the painting is (as it should be) the admirable study of Napoleon's countenance, on which, with all its expression of determination, the shadow of disaster has already settled. Mr. Gow's "On the Sands at Boulogne, 1805" (242), Napoleon cantering at the head of a small party of his general officers along the water's edge, and looking towards the country he was plotting at the moment to invade, is one of the best and most spirited pictures Mr. Gow has ever painted. Lady Butler takes us again to Waterloo—"The Reveille in the bivouac of the Scots Greys on the morning of the battle" (853). This is a hard picture and not remarkable for effect or colour in an artistic sense, but there is a reality about it which atones for much. The contrast is striking, and evidently intentional, between the wearied and not very cheerful demeanour of the awakening troopers and the alert look of the officer in the centre of the scene, who starts up on his knees with the joy of battle on his face; this figure is quite heroic, and is alone worth looking at the picture for. One uncomfortable element of realism is absent; by all accounts, the ground on the morning of the battle was in a far worse state of "slush" than there is any indication of in the picture.

In portraits the exhibition is strong, in quality if not in quantity. One may distinguish two or three types. There is the highly-finished "Society" portrait, as illustrated by Mr. Fildes's "Mrs. Arthur James" (250), which undoubtedly is a brilliant performance of its kind, and we presume this polished-up realism in portraiture is what best satisfies many persons, but it savours more of science and labour than of art in the true sense. There is more artistic life, perhaps more real "science," in Mr. Sargent's broad and massed painting in the portrait of "Mrs. Ernest Hills" (31), in which textures are conveyed or indicated rather than minutely imitated. The face in this painting is admirably expressive. It may, on the other hand, be questioned whether the broad and free use of the brush affected by some of the ablest portrait painters of the day does not sometimes lead to imperfection in the modelling of arms and hands, as in Mr. Shannon's otherwise admirable portrait of Miss Pember (324), where the lights are laid on arm and hand in a manner that leaves rather an angular effect. Mr. Richmond seems to be trying a new manner in his portrait of the "Countess of Pembroke" (34); some of his portraits used to be open to the charge of being hard, though decorative; in the present work there seems to be a deliberate change of manner in the endeavour after a soft texture, and absence of strong definition of line, possibly carried a little too far; but the work is an interesting one, and the figure very dignified in pose. Mr. Seymour Lucas's "Mrs. J. Walter," in black dress, relieved against a crimson-backed chair, is an excellent picture, and much superior to his "historical" picture (77) in the next room; as also we may say of Mr. Clausen's portrait of Mrs. Herbert Roberts (57), which is one of the most original and artistic portraits of the year, and is superior in value to any of the painter's other works before mentioned. In Gallery III., Mr. Sargent and Mr. Herkomer give us two very straightforward and characteristic portraits of a well-known poet and a well-known politician respectively (172, 188), who may be distinguished as "the angel in the house" and "the god in the car"; Mr. Ouless exhibits a capital and forcible portrait of Mr. Ernest Hills (215), and Mr. Collier an excellent likeness of Lady Hallé (493).

English landscape-painting seems to tend more and more towards the search after delicacy and tenderness of effect rather than power. One of the first landscapes we noticed, that by Mr. Waterlow (47) in the first room, shows a degree of delicacy of aërial effect in the treatment of the distance which we do not remember to have noticed in his landscapes before. We see the same tendency in his "Golden Autumn" (167), the same again in Mr. East's two landscapes (516 and 575), the latter a very beautiful work. Mr. H. W. B. Davis has always been more or less among the seekers after tenderness of sentiment and delicate gradation in effect in landscape, and in this respect his art seems to grow more perfect year by year. It is a joy to see such a painting as "Forenoon on the Condette Dunes" (76), which we are tempted to say is the most beautiful work of his that we have ever seen; but "The Close of Day" (263) in the next gallery leaves one in doubt which to like most. In both the sentiment of landscape is perfectly rendered, with a treatment which seems to indicate all that the eye can take in of detail in a broad landscape, without over-accentuating anything. Compared with this, the painting of trees in a landscape (87) in the same room as the first-named of Mr. Davis's, by a very well-known landscape painter, has the appearance of an aptitude and manner rendered easy by long practice rather than a careful study of nature. The realism of effect in the foreground of No. 87 is very remarkable, but Mr. Parton belongs to the school of clever painters with one effect. So does Mr. Graham, who has never been more real than in his sea picture (189) of this year—only that we have seen it so often before. Mr. Davis's paintings are, indeed, always recognisable, but there is plenty of individual detail in each; he does not repeat himself. But apropos of the struggle after delicacy of effect, we would suggest that the other type of landscape painting has its claims, and it is rather vexing to see such a broad and fresh piece of painting as that by Mr. Mark Fisher, "An Essex Height" (30), thrust into a corner in the first room. It merited a better place than that. Nor do we understand why Mr. Adrian Stokes (206) has been suddenly bidden to "go up higher," in the reverse sense from that of the parable, where his apparently delicate work cannot be seen. Mr. Henry Moore interests us by exhibiting an inland landscape, "Glen Orchy" (201), which shows in the painting of hills much the same kind of bold handling which he brings to the painting of seas; oddly enough, the torrent in the foreground is the least successful part of a landscape by a painter who has been painting nothing but water (sea-water, that is), for years past. Mr. David Murray has never shown better than this year; and if we take his two best works, "The Angler" (590) and "Thistledown" (787), we must be struck by the versatility of a landscape-painter who can treat with equal success scenes so far apart in sentiment and character. "England's Canals" (373), by the same painter, is again quite different in character and composition to the other two, and admirable also in its way. Of the three we prefer the "Thistledown" picture — one

of those flat scenes with a large sky which Mr. Murray has always excelled in; though we do not suppose that will be the popular choice. Among other landscapes to be looked at are Mr. Johnson's "Windsor Castle" (320); Mr. J. W. North's rich wooded scene, "Fruition" (485); M. Macwhirter's "Evening in the Forest, Guisachan" (515); Mr. Macbeth's "Dunster Castle" (550); and Mr. Reid's "The Blind Fiddler" (852), which is practically a landscape, and which shows a power of giving the impression of "open-air" effect which is very remarkable.

Among sea paintings Mr. Hook is at his best in the "Seely Sheepe" (245), with its foreground rocks and bright mass of tumbling water beyond; Mr. Brett is at his best in the beautiful little work, "The Outlook from my Native Cliffs" (232), and not altogether at his best in his large work "The Isles of the Sirens" (409), where the sea is too streaky, though the general effect is very fine. Mr. Somerscales repeats his effect of dark open sea in "After the Gale" (593), but hardly with the same effect as at first.

To the sculpture we shall refer on another occasion.

DESIGN FOR A STAIRCASE PAPER.

THIS paper was designed by Mr. Heywood Sumner for Messrs. Jeffrey & Co., by whom it is executed. The design is so arranged that when hung the complete pattern takes a different form on the rake of the staircase to that which it does on the levels of the hall and passages. It is an inexpensive paper of bold and effective design, and well suited to its proposed position.

Staircase Paper: Designed by Mr. Heywood Sumner.

PAINTING AND ITS RELATION TO ARCHITECTURE.*

Continued from page 331.

LOOKING at modern painting we find two main schools, the poetic and the realistic. They are not necessarily in conflict, but the critics have determined to consider them so, and have so talked about them and egged them on, that the painters themselves, I think, have got confused, and we must consider the schools as opposed.

Let me quote a few sentences from modern criticism, they shall all be from the same number of the same Art magazine—the most recent one, and, therefore, presumably up-to-date. In the *Studio* for May, 1893, you will find all the following passages:—"Complete mastery over materials is, after all, not everything—in fact, from the artistic point of view, work only begins then," . . . "unless the feeling is true, the work fails to interest us. Herein lies the whole question of artistic production."

Again, "The world is too big, too grand, too serious to be ruled by technique."

So far the idealists.

Now hear the other side.

"This idea that genius is everything and execution nothing is screwed fast into the skull of every Englishman. . . ."

"How very strong is the desire for the ideal in this country, since not even ridicule can crush it! For in what other country would people have dared show their taste for art as the æsthetes have done here during the last few years. . . . But these æsthetes, of whom the undoubted head is Mr. Burne-Jones, have rendered great service to the art of their country. In the search for their puerile puzzles, they have, in making their way, endowed England with a decorating art." (Burne-Jones' puerile puzzles!) Again, "The more an artist relies upon the intelligent use of his pigment, to the exclusion of the literary interest, the more he will vex those who are unable to follow him."

Lastly, in order to see how this disdain of fine thought and beautiful intention in painting operates in actual work, I will turn to a letter which appears in the same number of the magazine, signed by a portrait of the writer.

He is in Spain, in a half-ruined ancient castle, occupied apparently by peasants, and writes as follows:—"While M. aired his Spanish with the last representative of the family, I made a sketch of the place, and as I was doing so a shepherd brought in a sheep. Tossing it backwards on a bottomless chair, he cut its throat, while a woman held a bowl to catch the blood, to the great delight of a child, who dabbled its hand in the warm fluid and crowed with glee. This would have made a picture: the tone and gloomy colour of the thing was mighty."

"This would have made a picture." In the Scuola de San Rocco, at Venice, the mightiest man that Venice ever bore, Tintoret, has painted the whole poem of suffering, and sorrow, and disease, in order to glorify by contrast and by conquest the heavenly art of healing: and to place an emphasis upon his message which shall make it knock upon the coldest heart and dullest mind, and force an entrance by shock and by horror, lest perchance the gate open not to natural gentleness and love, he has not shrunk back or stayed his hand from showing us a scene which well might challenge question: for foremost among those miserables who surround the pool of Siloam waiting for the descent of the healing angel, and for the moment monopolising the attention of Christ himself, is a group composed of a young woman, gloriously beautiful, but lying in the lap of an old hag whose expression of cold and distressed perplexity, rather than sympathy or love, proclaim her venal and contemptible, and who calls the attention of Christ to the sufferings of her charge, to which it is impossible to allude.

Why did Tintoret paint such a scene? Did he say to himself "It will make a picture"?

I will tell you why he painted it; and if you know his work yourselves—its unvarying majesty and high-mindedness—you will hardly call me to question. He painted it (and nothing but such motive would ever have induced him to paint it or tolerate it), with high moral and instructive

* Being the conclusion of a paper read before the Architectural Association on the 26th ult., by Mr. C. W. Whall.

purpose—to show, for instance, that the most degraded is not outside the love of God, that the most despairing is not to be despaired of; he painted it to bring hope back to the hopeless and shame back to the shameless, by showing that no depth to which we can sink can sink us below the notice and healing of Love, and that the eyes of the Divine Physician are turned towards us, and not from us, by the violence of our malady.

Whenever the great minds of the past have treated of such things, this is the temper in which they have done it. The greatest men of all have never turned towards the seamy side of our life, or the world's life, by a natural inclination and preference, and never present evil, suffering, or disease to our view except with some strong didactic intention.

But it is not worth while to spend much time in warnings against ugliness. Very little of the arts which have been betrayed into the aberration of seeking it has stood the test of time, and in the main it is true that to name the great works is to name the beautiful ones. Still, it is as well to remind you that old forms of painting are being much challenged now; new forms are being started; and people are liable to be carried away by the new, at any time, as the only right thing, and afraid of being called "old-fashioned" and behind the age if they do not. There is a disposition to-day to regard the conquest of difficulty as the only thing worthy of men's admiration. It is true that, whenever a man has done a thing that was hard to do, he has done good to the world—set a good example. But the doing of a difficult thing is not the whole of art. It is difficult to win a race, to conquer in a prize-fight, to climb the Matterhorn, to construct the Channel Tunnel, or to build the Forth Bridge. Why is not the Forth Bridge a work of architecture? It is the largest building in the world, and the greatest triumph over difficulty that the science of building has ever gained. Why is it not a work of art? Simply because it was built without a thought of beauty, and because it is not beautiful. Nor is a painting worthy of the name of art unless it fulfils these conditions.

But what, then, of Hogarth's works, for instance, or those of Teniers?

There is certainly no intention to be beautiful. Do I dare to say they are not art?

I must not in these days, amid such strong conflict of opinions, say anything so calculated to bring my words into contempt. There is a beauty in the actual craftsmanship and fineness of handling in these works that must make them respected—there is the conquest of great difficulty and the evidence of much self-discipline and severe training which must make these things a useful and valuable lesson to humanity, and justify their claim to a place in the stream of our progress. But, having said thus much, I will tell you plainly that, if it were possible to suppose that those men and others like them had it anywise in them to have spent such fine skill on objects in themselves gracious, then their spending them as they did was one of those countless instances of mistaken effort and misapplied power which through all the ages have at times filled the history of the world with waste and with regret; and I will also tell you this, that I believe if Phidias or Pericles could stand, say, before the "Marriage à la Mode," they would turn away from it as a very strange thing to look upon and a thing full of wonder, but by no means the work of a man who was "in truth taught of the Muses."

I prefer, however, to consider, by reference to more modern work, the problems and questions that press upon us, so I will return to the sheep-slaughtering scene which our impressionist friend says "would have made a picture." I am sure he would have made a very clever picture of it, but let me point out to you two very important things, first, that the greatest leaders, even in that phase of art we are discussing, never give in their works any justification for that disregard of beauty in all else than technique, which has been audaciously put forward by certain painters and critics. Who ever saw Whistler (who towers head and shoulders above the rest), who ever saw Corot indifferent to beauty of sentiment or of form? I would never be for supporting an argument by a mere appeal to great names, but until some man as great as these arises to paint the horrible and the base, we may well go on our way unshaken in our old-fashioned notions of art.

The other thing I had to say comes nearly home to you architects.

It is this: That it would have never become possible for our tourist in Spain to have uttered of the scene he described, "this would have made a picture," had it not been for the lamentable divorce between the sister arts which has left the cabinet picture to become the isolated and irresponsible thing that it has, and so to fall into the position of a work produced throughout with the fact constantly in the mind that it will have to make its first appeal, and the one on which its immediate success or failure depends, from the walls of a glaring gallery, where it must scramble and jostle for precedence in a spirit of most unworthy rivalry, and that its subsequent history must be to be made a mere movable, and thus sink into the position of a counter in the speculations of the market-rigging and conscienceless dealer. And I think it must be owing to this that many of our painters for years past have been tempted to seek after something that will startle rather than something that will charm. And the reason why I am "happy" to tell you of the decline of the cabinet picture is not my objection to cabinet pictures as such, but only to cabinet pictures as this spirit has at present made them. I said it was the divorce between the arts which has led to this, and I think if you consider you will find it true, for surely any man building his own house, with that culture and refinement which would be implied by his being interested in its architecture, would *ipso facto* be so far educated as to wish to have nothing there but what would be a permanent source of reasonable and dignified pleasure and strengthening and repose; but alas! we live in other men's houses: we are always "moving," or contemplating moving, somewhere else; and really, with everything here to-day and gone to-morrow, we take our dose of pictures every spring in the public galleries and do not pause to consider them as having any permanent place in our lives, do not look to them for beauty or for solace, if for a few moments they spur our jaded souls by curiosity, or horror, or excitement. It is for you to help us in these matters by taking a lively interest in the union of the arts in which lies all our future hope, and by showing us the possibility of surrounding ourselves with seemly and beautiful things generally, and thus make it impossible for the beautiful plant of art, which spreads abroad its branches and puts forth its leaves in splendid and varied crafts, to make its only failure in that which is the crown and flower of all, by painting, which so lamentably misses its mark.

In the commencement of my paper I used all my endeavour to get firmly fixed into your mind the idea of the painter's special craft—the technique, which, to some painters of the present day, seems to be the one thing needful. I also declared my belief that it was needful; that no one without it could claim to be a great painter; but I have been in the latter part of my address to you dwelling on the value and dignity of those other elements of beauty which painting is so eminently well fitted to express, and to neglect which is to resign a portion of its crown: and you will find that painters, as a rule, have valued this skill (if they lived at a date at which it was possible for them to know of it) in proportion as they were seekers after beauty—Raphael more than Michel-angelo; Bellini more than Raphael. They "loved that beauty should go beautifully." So also they were the decorators, and if I name those who in these days come nearest to having that quality — Burne-Jones, Watts, Albert Moore, Leighton, Whistler—you see at once that I name the very men amongst painters best fitted to associate themselves with your art in the capacity of decorators. For in truth they are the seekers after *beauty*. Others may wish to be historical or dramatic or pathetic or domestic or (God help us) comic in their painting; they are bent on being beautiful; they seek that first; all the rest may be "added unto it."

Forgive me for dwelling at such length upon this point, which should be one of the commonplaces of art; it is astonishing indeed that the utterance of such a rudimentary truth should be needed, but we cannot go through any gallery of modern pictures without seeing that it hardly enters into the popular mind of the present day that art has anything to do with beauty: far less that it has everything to do with it. I can hardly point this out more clearly than by reference to the collected works of two recently-deceased artists exhibited simultaneously a short time back. The one a popular favourite through the whole of his career, crowned almost at its commencement with full academic honours. The other almost universally ignored and neglected.

It is not necessary for me to recall the catalogues of these two exhibitions to your memory item by item; when I mention the names you cannot fail at once to recall the general impression that the first consisted of scenes of violence, conspiracy, personal combat, personal challenge, court intrigue, and low-comedy in trunk-hose, and that the latter was one harmonious procession of gracious form and colour; that one contained nothing that was markedly and intentionally beautiful, and the other nothing that was otherwise. Is it superfluous then in me to call attention to the most rudimentary definitions of the purpose of art in an age which so arranges itself that John Pettie should for twenty years have held a position in which it became his duty, from time to time, to give his voice in judgment upon the works of Albert Moore?

Nor can we console ourselves with the thought that it is only this particular nation, and this particular age, which has so erred.

It is a curious fact in the history of the human race that it is always liable to have the highest motives corrupted, and the most magnanimous temper spoiled by being confronted with actual achievement of any kind, in however undesirable a direction.

A nation, penetrated and informed with the love of beauty, and doing everything beautifully for the sheer love of it, will turn its back upon itself in a moment, and disdain its whole past, when accidentally brought into the presence of some new dexterity, even though exhibited in a field not worth cultivating. It will at once relinquish the pursuit of all that it was seeking, and despise all that it was producing to follow some skill, not one tenth as fine as its own, but which challenges to a competition by its being new. It is hardly too much to say that the petty mechanisms and realisms of European work, aye, and third-rate Brummagem work at that, have in the last forty years destroyed the arts of the East. And I cannot resist concluding with an anecdote which has it humorous side, and which brings out this truth into somewhat strong relief.

I was going through Italy some fifteen years ago, studying chiefly the art of the thirteenth and fourteenth century. I had with me as companions two younger men than myself, who were following with younger, but I think not stronger, enthusiasm the teaching of Ruskin. However, I was sufficiently older to manage my enthusiasms more cunningly, and the consequence was that I was always poking fun at the other two. However, one of them, a dear young Scotch architect, now, alas, no more, had all the caution and pawkiness of his race, and would generally grasp the situation at once, and give me as good as I brought.

I had long recognised in the art of Giotto the intense *struggle* of the man, and how, with all his powers, he must have longed for powers beyond them to do the things he must have dimly imagined possible, but knew not how to set about. I had thought, and trembled to think, what might have been the result could he have been suddenly brought face to face with the clever realisms of modern art; and one day, standing before one of his frescoes, I turned to my companions, and said: "Look here, you fellows, to put it shortly, if Giotto could have seen Frith's 'Derby Day' he'd have gone into raptures." I forget what gesture of impatience my enthusiast friend made, but the Scotchman just leaned an inch towards me and replied as soberly: "P-r-robably have given it to Dante on his bir-rth-day." Well, gentlemen, I think we need not contemplate so exaggerated a catastrophe as that, for I think—upsetting as I am sure the experience would have been to Giotto—there is one thing that would have kept him right—his architectural sense; but for that I can easily imagine him so misled by the plausible dexterity of that celebrated work as to forget that it was not beautiful, but I think the union of the arts which was so happily embodied in him must have led him to distrust it at once because it was not decorative.

Do not imagine that all I mean by "decorative" is the art which is usually now alluded to under that name. All the finest art is decorative, Veronese no less than Giotto, and what can be more reposeful and perfect and "liveable" than an eighteenth-century room, with the rich warmth of Reynolds, and the serene grace of Gainsborough, amongst its slender mouldings and its dainty white and gold?

Don't, above all things, be narrow, or imagine that I want you to seek for art that is very flat, with a brown outline round the faces and with no shadows; but what I do urge you to seek for is art where beauty has been the aim before realism, glorious colour before deceptive light and shade, and graciousness, and sweetness, and dignity, and repose before dramatic fervour, show, excitement and fuss.

It is the cultivation of this temper in you archi-

tects that forms the one hope of us painters who, disgusted with the frivolity and ugliness of the bulk of modern work, have been struggling along the despised and neglected path of decorative art.

Upon you falls the honourable (but responsible) task of directing the accessory arts, and it is with a real joy that we see so many of you now seriously setting yourselves to learn them. You will find in doing so, even if you learn but one of them, the grounds for a sympathy with your brothers in art, to which you have hitherto been strangers, and by virtue of which you will find them working *with* you, rather than *for* you, with the enthusiasm and joy which ever comes with sympathy. And depend upon it, when masonry, when timber and glass and metal and mosaic and sculpture and painting are each advanced to their own proper perfection and completion, and when, being so, they are brought under the direction of a master-builder, whose knowledge of and sympathy with their various excellences has largely helped to make them what they are, we shall soon cease to hear complaints that we have "no style," for, if once the various crafts were used in perfection and used in association, they would soon form their own right style, and being used in sympathy also, the characters which would be stamped upon each one, by virtue of its own perfect craftsmanship, would combine to form one harmonious style for the whole range of the arts.

I have thus endeavoured to make clear to you what I consider the great essentials of painting as an art, and the essentials of its relation to architecture. The two questions are almost inseparable and quite interdependent.

The doing well of what we have to do, the perfect and right use of our tools and our stuff, is the simple ground on which these arts meet—they can't come together at all, except by the humility and common-sense reasonableness of that first step; but this once taken, they can, hand-in-hand, pursue their common aim; and that aim is beauty. And in the pursuit of beauty they gain strength from each other, for all their past history shows that they have ever sought it most successfully when they have sought it in common; and I venture to think that, speaking generally, their past history also shows that the arts have ever attained the highest perfection of all, when, even beyond the attainment of physical beauty, they recognised yet another motive still and referred all their efforts to the standard of a high and noble conception of the whole of human life, domestic, civic, patriotic, and religious, in its completeness and its dignity.

You, builders of our temples and our halls and our homes, you students of our ancient glories, help us to recover that lost inheritance. When you apply to us to join with you in your efforts, do so in this spirit, and let us together apply whatever we can win back of the felicities and dexterities of our noble arts, in portrayal of things worthy of them—the great verities of life and being; in the reiteration of the unchanging voice of human aspiration, the affections of the heart that never grow cold, the thoughts that never die.

I have put before you two things—the technical and the ideal. Both necessary. The one is fine art, the other is fine life.

MAGAZINES AND REVIEWS.*

IN the *Art Journal* Mr. Sherard gives an account of the life, with many illustrations of the works, of the Bohemian artist Brozik, an engraving of one of whose works, the very fine painting of the "Communion of the Early Bohemian Protestants," forms the frontispiece to the number. Mr. Joseph Pennell contributes an article on "The Illustration of Books," described as "Notes for a course of lectures delivered at the Slade School, University College." Cheapness of modern processes, Mr. Pennell considers, has contributed to the multiplication of illustrated publications often filled with very poor art, mediocrity being cheapest, and the object of the publications commercial success rather than art. On the other hand, "when one finds the greatest artists in England drawing for a penny paper," we may hope that there is going to be a renaissance of fine illustration in spite of the prevalence at present of so much that is poor. Lady Dilke furnishes an article on Caldecott, with reproductions from some of his sketches and studies. The second article of the series on "The Royal Academy in the Present Century" will be of special interest this month to our readers, as it deals mainly with the life and works of Sir John Soane, the estimate of whose works, not very flattering, is, we think, tolerably correct. The authors speak enthusiastically, and there also we agree with them, in regard to the little-known interior of his house, now the Soane Museum, and its contents. But Soane had hardly the soul of an artist, and was fortunate rather than great. Mr. F. Miller's article on "Glass Painters" is a good and sensible one, and the illustrations are interesting and to the point. We are glad to see that he takes the right view as to Mediævalism in modern glass, arguing that the Mediæval artists simply drew as well as they could, and had no intention of being stiff and angular in their figure drawing. An article by Mr. James Orrock is devoted to that great and by no means sufficiently appreciated landscape painter, William Müller. A short article signed "T.," on "The Royal Academy and the Prosperity of Living Artists" suggests that the Academy is not doing justice to living artists; that it crowds their pictures together at the May exhibitions so that they mutually injure each other, while it spends large sums in winter exhibitions of Old Masters, which are hung in a manner much more advantageous to their effect. The writer suggests that after twenty-six years of these Old Masters' exhibitions, there should be substituted for them exhibitions of the works of living artists—say, as a beginning, the principal works of Academicians (why only of Academicians?) painted between 1870 and 1880. We will suggest, as an amendment, that such exhibitions of the works of living artists should not displace, but alternate with, the "Old Masters" exhibitions; old masters and living artists in alternate years.

The *Studio* devotes an article, by Mr. Dewey Bates, to that clever, but very unequal painter, Mr. Clausen, and Mr. Baillie Scott writes an article on "the decoration of a suburban house," with illustrations of some very pretty wall-paper and other designs, some of which, however, such as the "Swan" staircase paper, are not decorative in their lines; besides that it is a misapplication of nature to use the suggestion of a stream and a swan on it for a *raking* line in a paper, making the swans swim up-hill. "Snow as a subject for the camera" is a good idea, and the photograph of "A Snow Scene," by Mr. H. Johnson, is a beautiful illustration of the effect of photography on a subject of this kind.

The most important paper in the *Architectural Record* is that by Professor Goodyear on "Greek Horizontal Curves," mainly in relation to his own recent observations of horizontal curves in the long sides of the Maison Carrée at Nimes, but going more or less into the whole subject of curves in Greek buildings. He suggests that the horizontal curve was also intended to have, and actually had, the effect on the eye of a vertical curve, when seen from a standpoint below the side of the temple. The author admits that the explanation of the actual intended *purpose* of these curves is mystified rather than assisted by the further investigation of the subject, as it is impossible to frame any satisfactory explanation for the existence of curves in one part of a building and not in another, or of the different application of them in different portions of two very similar buildings of the same style and nearly the same date (the Parthenon and the Theseum, for instance). It seems doubtful if we have got to the bottom of it yet. As to the Maison Carrée we must say that we feel a little sceptical; at all events the drawing "from a photograph" made to show the horizontal curve of the longitudinal cornice, shows it rather as a very obtuse angle (as if due to displacement) than a curve; and as some of the illustrations in the article are reproduced automatically from photographs, one is tempted to ask why that process was not adopted in this illustration. It would have been more convincing than the drawing.

The *Edinburgh Review* contains an article on "Saint Sophia and Byzantine Building," ostensibly a review of Mr. Lethaby's book, but the main object of the article is to put the architectural facts as to Byzantine building in a form intelligible to general readers. In the same number an article on "Somersetshire," a review of two recent books on the history and topography of the county, contains a good deal that will interest many of our readers.

In the *Quarterly Review* the article on "A Century of Science" gives a summary of the changed position of scientific knowledge and method since the days of Buckland, whose biography, along with that of Owen, forms the occasion for the article.

The *Nineteenth Century* contains a very interesting and valuable article by Professor A. E. Wright on "Colour Shadows," by which is meant the effect of "after images" of bright colour on the eye, and especially the effect of bright colour in portions of a landscape on the colour appearance of the less highly coloured or less brightly illuminated portions of the scene. It is an article which ought to be of considerable interest to painters.

In the *Century* the article on "Beyond the Adriatic; a New Field of Travel," with Mr. Pennell's sketches, is continued, and deals with places and buildings much less familiar than Spalato, which was the main subject of the last paper.

To *Harper* M. Royal Cortissoz contributes an article of considerable interest on "The Museum of the Prado" at Madrid, the illustrations to which remind one how many splendid and world-renowned works of Velasquez are there enshrined. "In Sunny Mississippi," by Mr. Julian Ralph, is one of those topographical articles which frequently appear in American magazines, and which are made very interesting by the numerous sketches which accompany them, including a good many of interior and exterior architecture, among which the interior of "the Senate-Chamber at Jackson," a circular colonnaded apartment, looks as if it ought to be a remarkably graceful room; whether it would be a good one for its purpose acoustically is doubtful.

"French Posters and Book Covers" is the subject of an article by M. Arsène Alexandre in *Scribner;* a subject which is getting rather worked out in a literary sense, but the piquancy and variety of designs in this department of French art seems almost endless. M. Raffaëlli's short article on "Impressionists" is interesting for some reminiscences of Manet and of the early conditions of the movement, but has no critical value. Of "Wood Engravers" M. Pannemaker is the one dealt with this month, and his powerful engraving of Velasquez's Head of a Pope, at the Doria Gallery, which forms the frontispiece to the number, is a full justification of the importance attached to his work in the article. In an article on the question "Will the Electric Motor Supersede Steam?" (for travelling more especially) Mr. Wetzler answers in the affirmative; for his reasons we must refer our readers to the paper.

In the *Monde Moderne* we meet again with the subject of "L'Affiche Moderne," with a number of illustrations of posters, all clever, some vulgar, some very graceful, and all entirely new to us. An article on "Le Brèviane Grimani" gives a number of reproductions from the pages of this celebrated illuminated book. Another article describes "Le Cabinet des Estampes de Paris." We may direct attention also to the article on "Des Grands Effets de Lumière," in connexion with photography; that on "L'Evolution des Industries d'Art," with some remarks on "the search for a new decorative style," and the illustrations accompanying it; that on "Nos Arsenaux," and one on "Coins Ignorés du Comte de Kent," a very unusual kind of article to find in a French magazine.

The *National Review* contains a rambling and incoherent article by Mr. Pennell on "The Condition of Wood Engraving," in which it is impossible to find what the writer is driving at for two sentences together, except that he is very angry with something or somebody.

Scots Lore contains a long article by Mr. P. Macgregor Chalmers on what he believes is the discovery of the remains of the original Church of St. Ninian, at Whithorn, "the first Christian church in Scotland erected of stone." We have not space to refer to the points of the argument here, but archæologists will find the article of some interest. It is proposed to investigate the site further.

In the *Gentleman's Magazine* is an article on Pevensey Castle, under the title "A Mediæval Stronghold," by Mr. Arthur W. Beckett.

The *English Illustrated* contains a preposterous suggestion by Dr. Joseph Parker, "of the City Temple," as to a general rebuilding of London, and an interview or "morning call" on Lord Ronal Gower, whose position and importance as a sculptor are, we must beg to say, absurdly over-rated.

The *Essex Review* contains an article on the little brick Church of St. Nicholas, Chignal Smealey, with a nave 23 ft. long and of two bays. Some details of brickwork, &c., are given. It would add to the interest of these articles if a general perspective sketch, or a reproduction

* The object of these notes is to point out anything in the contents of the current magazines which is of special interest to our readers, with occasional brief criticisms on the views expressed in such articles. When a magazine which has been sent to us is not noticed, it is because that number contains nothing that it is within our province to comment upon.

from a photograph, of each church, were given with the article.

The *Antiquary* continues the series of articles on "English Glass-making in the Sixteenth and Seventeenth Centuries."

The "Pictures from *Punch*" continue to appear monthly, and the last number revives for us a good many excellent and well-remembered sketches of an earlier period.

The *Fortnightly Review* contains a short article on "The Bach Festival," being a critical note on some points in connexion with Bach's works and the scheme of the Festival, by Mr. H. H. Statham, which may interest some of our musical readers.

THE ROYAL INSTITUTE OF BRITISH ARCHITECTS:

THE ANNUAL REPORT.

THE Annual General Meeting of the Royal Institute of British Architects was held on Monday, at No. 9, Conduit-street. The annual Report of the Council, which was adopted, contained the following passages:—"The Council have held twenty-five meetings since the adoption of their last report by the annual general meeting of May 7, 1894, exclusive of meetings held by Committees of the Council.

The death of Wyatt Papworth, who with his father John B. Papworth and his brother John Woody Papworth, were most indefatigable workers on behalf of the Institute, caused the deepest sorrow to the Council, with whom he had so long been associated. That of Ewan Christian, a Royal Gold Medallist, President in 1884-86, and one of the oldest members of the Institute, has been severely and widely felt; and the Council fully concur in the graceful tribute paid to his memory by Mr. Macvicar Anderson and Mr. G. H. Birch. The loss of Sir Henry Layard, an Hon. Fellow, who had been connected with the Institute for forty-four years, who received the royal gold medal in 1868, and whose services to architecture were so well known, is also to be deplored. . . .

The Fellows now number 604, and Associates 921. During the twelve months five Fellows (who were previously Associates) and 91 Associates (19 of whom were previously Students) have been elected. Three Hon. Associates—Alfred Gilbert, R.A., F. G. Hilton Price, director of the Society of Antiquaries, and W. B. Richmond, M.A., A.R.A., have been elected; and six Hon. Corresponding Members—Charles Buls (Brussels), Barr Ferree (New York), Alois Hauszmann (Budapest), Henri Edouard Naville (Geneva), Emerich Steindl (Budapest), and Louis Viollier (Geneva). There are now sixty-one Hon. Associates and fifty-five Hon. Corresponding Members.

The number of Students has increased to 143, as against 101 at the coresponding period last year, and the number of Probationers to 736, as against 577 in 1894.

The loss to the Institute by death during the year has been as follows:—Fellows—Charles Aldridge (Liverpool), R. C. Baxter, Lawrence Booth (Manchester), T. E. Bridgen (Manchester), Ewan Christian, W. G. Coward (Sydney), C. G. H. Kinnear (Edinburgh), Arthur Lett, J. C. Moncrieff (Bristol), James Murgatroyd (Manchester), E. G. Paley (Lancaster), Wyatt Papworth, and Ernest Turner; Associates—Arthur Cawston, A. H. Clark (Norwich), C. H. Cooper, Morton M. Glover, H. A. Gregg, H. A. K. Gribble, J. G. Hall, Frederick Hemings, Gordon M. Hills, and J. A. Macara; Hon. Associates—Henry Faija, W. Calder Marshall, and Alfred White; Hon. Fellow—Sir Henry Layard.

The Council, having appointed a committee to consider the question of the hon. associate class referred to in the President's opening address, have approved in principle the establishment of an additional class of members who shall be craftsmen in the arts allied to architecture; and have referred the matter back to the committee to work out. The Council hope, before the close of the Session, to bring forward a scheme for the consideration of the Institute.

The Preliminary examinations of November, 1894, and March 1895, were held in London, Bristol, and Manchester, and the 217 successful candidates have been registered as probationers. The Intermediate examinations were held in London on the same dates, when fifty-seven probationers passed, and were registered as students. Examinations qualifying for candidature as Associate were held during the week commencing November, 26, 1894, in Manchester, Bristol, and Glasgow, when sixty-four passed. The first of the Final examinations qualifying for candidature as Associate was held in London and Manchester from March 29 to April 6, 1895, when out of the eighty-six applicants who attended twenty-six passed. The Council again tender the thanks of the Institute to the Board of Examiners for the arduous services rendered by them, and to the allied Societies at Manchester, Bristol, and Glasgow.

The Ashpitel Prize was awarded to Mr. W. E. Vernon Crompton, Probationer, 1891, Student 1892, Qualified as Associate 1894, he having most highly distinguished himself in the Qualifying Examinations held in 1894.

As a concession to probationers who are students of the Royal Academy, the Council, acting on a recommendation of the Board of Examiners, have decided to permit such students, in lieu of the testimonies of study required in the Art Section, to submit their Academy drawings, provided they include sufficient studies of Gothic work to cover the requirements of the Section.

A statutory examination for Certificates of Competency to act as District Surveyor in London, and as Building Surveyor under Local Authorities, was held in October, 1894. For the former two candidates presented themselves, but neither passed. For the latter there was but one candidate—Mr. Francis Baugh Andrews, Associate,—who was granted a Certificate of Competency.

The Royal Gold Medal (1894) for the promotion of Architecture was presented to Sir Frederic Leighton, Bart., P.R.A., on June 25, 1894. By a resolution of the Institute passed on March 11, 1895, Mr. James Brooks, Vice-President, was elected Royal Gold Medallist for the current year, for his executed works as an architect; and Her Majesty the Queen has graciously signified approval of the award.

The prizes and studentships 1894-95 attracted an unusually large number of competitors. The deed of award made by the Council under by-law 66 was read at the general meeting of January 7. The designs and drawings were publicly exhibited in the larger Conduit-street Gallery from Jan. 4 to 14. Previous to the distribution of prizes, the President delivered the annual address to students, which was followed by a critical paper from Mr. J. M. Brydon on the competitors' works. The task of reviewing the essays placed second, third, and fourth was kindly undertaken by Dr. Frank Granger, of Nottingham. While on this subject the Council cannot refrain from acknowledging, on behalf of the Institute, the studentships generously placed at their disposal by Mr. T. W. Aldwinckle.

As in former years, a selection of the prize drawings was forwarded to the allied societies at local centres. It included, from the measured drawings, the elevation of the gateway of St. John's College, Cambridge, by Mr. W. H. Ward (silver medallist), and elevations, &c., of Llandaff Cathedral, by Mr. J. H. James; the Soane medallist Mr. H. S. East's design for a picture gallery, and perspectives for the same subject by Messrs. C. H. B. Quennell and H. Jefferis; a selection of the Tite prize drawings by Messrs. R. Shekleton Balfour (Tite prizeman), Banister F. Fletcher, W. T. Conner, and D. W. Kennedy; several drawings by Messrs. A. J. Dunn (Pugin student), J. A. R. Inglis, and C. C. Brewer; and drawings, sketches, &c., of the Owen Jones student, Mr. J. J. Joass.

By the courtesy of the French Government and through the good offices of Monsieur Daumet, then President of the Académie des Beaux-Arts, the Council were able to borrow a remarkable series of drawings of the Pantheon executed by Monsieur Chedanne, a "Pensionnaire" of the Academy of France at Rome. These drawings—of rare excellence—were hung in the smaller gallery from January 7 to January 14, during the time the works submitted for the Institute prizes were on view, and advantage was taken of the opportunity of inspecting them by a large number of members and the outside public. Mr. Phené Spiers at the meeting of January 7 gave a description of the drawings, and at the meeting of the 14th, when Monsieur Chedanne was present, read a paper giving an account of the artist's researches at the Pantheon, and of his restorations of that monument. At the meeting of January 14 there was also exhibited a collection of drawings of the late Mr. H. A. K. Gribble, including his designs for the Brompton Oratory.

Mr. Poynter, R.A., having, on behalf of the Society for the Preservation of the Monuments of Ancient Egypt, invited the Council to appoint one or more members to sit on a committee for considering the best means of carrying out the proposed archæological survey of the Nile Valley from Assouan to Korosko—such survey to include the copying of all inscriptions, the photographing of all ancient structures and remains, and the examining of all foundations—the Council, sympathising with the objects of the Society, nominated Mr. Arthur Cates and Mr. Phené Spiers to act on the Committee; and these gentlemen have attended some of the meetings.

On July 2, an anniversary dinner, in commemoration of the first general meeting of the Institute in 1834, was held at the Whitehall Rooms of the Hotel Métropole, the President, Mr. F. C. Penrose, in the chair. Over 200 members and guests were present.

In compliance with the request of Dr. Moline, Hon. Secretary of the British Committee for the International Congress of Hygiene and Demography held in September at Budapest, to send delegates to the Congress, the Council appointed Mr. T. W. Cutler and Mr. John Slater to attend on behalf of the Institute: but Mr. Cutler was unable to be present at the Congress, but Mr. Cates kindly consented to take his place. . . .

On October 29 the Council received a deputation from the London Lodges Committee for Operative Stonemasons, which stated certain grievances of the London stonemasons through the practice of working stone, intended for London buildings, at the quarries. It was objected, among other things, that quarry-worked stone was usually rough, and that much of it had to be rejected; that it was frequently injured in packing or during carriage, &c., and had afterwards to be 'doctored up' to fit it for its purpose; that the stones worked at the quarry were often taken from the softest beds, and that, as the wages of the quarry-masons were lower than the London rate, the contractor for works in the metropolis derived a pecuniary advantage by using this inferior stone. The Council in their reply stated that, as a rule, it was desirable that stones should be worked near the building for which they were required, so that they could be inspected by the architect while being worked.

In consequence of the conditions now attaching to the appointment of district surveyors in London debarring them from exercising their profession as architects, the question arose whether, under the charter, district surveyors appointed under the new regulations were eligible for admission as Fellows. The matter was referred to the Institute solicitors, Messrs. Markby, Stewart & Co., for counsel's opinion. A case was prepared and submitted to Mr. Arthur Cohen, Q.C., who gave a written opinion that unless a district surveyor had, prior to his appointment under such regulations, been in independent practice as an architect for seven successive years he was not eligible for the fellowship.

On November 4 the Council directed the attention of the London County Council to the continued paucity of applicants for certificates of competency to act as district surveyors in London, and to their want of knowledge; and at the General Meeting of December 3 a paper was read on the subject by Mr. W. D. Caröe, when a resolution was passed to the effect that the high status of district surveyors should be maintained, by allowing them the right of private practice as before. The result of the meeting was duly communicated to the London County Council, who, in their reply, expressed their determination not to reopen the matter. The Council have since appointed a Committee, consisting of Messrs. W. D. Caröe, T. W. Cutler, Lacy W. Ridge, Charles Fowler, and T. H. Watson, to consider the position of district surveyors in face of the conditions imposed by the London County Council; and an interim report has been received from the Committee.

The Council, being empowered under section 175 of the London Building Act, 1894, to appoint one of the three members forming the Tribunal of Appeal, appointed Mr. Arthur Cates to the office in December. The other members are Mr. D. Cubitt Nichols, appointed by the Secretary of State for the Home Department, and Mr. T. Chatfeild Clarke, appointed by the Council of the Surveyors' Institution. Mr. Cates was subsequently elected Chairman of the Tribunal, he having been Chairman of the two Tribunals constituted under the London Council General Powers Acts of 1890 and 1893 from their commencement.

A Bill for the Registration of Architects, promoted by persons whose names are not disclosed, has been introduced into the House of Commons by Mr. Atherley Jones, M.P., and read a first time. The petition against it, on

behalf of the Institute, was duly presented by Sir Richard Webster, Q.C., M.P., who, with Mr. Græme Whitelaw, M.P., and Mr. James Campbell, M.P., has given notice of opposition to its second reading.

The formal declaration of trust, bearing the seal of the Duke of Devonshire, and setting forth the conditions under which his Grace has made over to the Institute the valuable collection of original architectural drawings by Palladio, Vignola, Inigo Jones, John Webb, Kent, and others, was signed by the Duke on December 17, 1894. The declaration states that the collection shall at all reasonable times be open for the purposes of study and reference to all present and future members and students of the Institute, under such rules and regulations as the Council may deem necessary or expedient. By clause 6 the Institute is required to insure the collection against loss or damage by fire and other accident, in the sum of 400*l.* The declaration of trust and the schedule of the contents of the various portfolios and boxes comprising the collection are printed at page 185 of the *Journal.*

The Art Standing Committee report that ten meetings have been held since the publication of the last annual report, and seven since the election of the present committee. The committee appointed Mr. Alfred Waterhouse, R.A., Chairman, Mr. James Brooks, Vice-Chairman, and Messrs. W. D. Caröe and George Kenyon, Hon. Secretaries. In view of the fact that one or, possibly, two important new bridges across the Thames at Vauxhall and Lambeth were in contemplation by the London County Council, the committee gave special attention to the matter with the object of securing for London structures of monumental dignity worthy to rank with Waterloo and London Bridges. Although the committee regret that their endeavours to secure stone structures have been unsuccessful, they nevertheless desire to record their sense of the courtesy and attention with which their views have been received by the Bridges Committee of the London County Council. They met to view all the Metropolitan Bridges, and, with the sanction of the Bridges Committee of the County Council, a deputation introduced by Mr. Macvicar Anderson attended at Spring Gardens last May. Subsequently, by invitation of the Bridges Committee, a second deputation attended at Spring Gardens, which led to the Council of the Institute sanctioning co-operation, as suggested by the Bridges Committee (subject to the Council's approval), in the production of a design. To this end the engineer of the London County Council has furnished the Art Committee with the structural details of the proposed bridge, and they now have the matter under their consideration.

Mr. Seth Smith's proposal for a permanent Gallery of British Architecture was referred to the Committee by the Council for consideration, and the committee requested Mr. Seth Smith to attend and give his views. The matter was then fully considered, and it was deemed advisable to postpone the subject until something further was known of the public interest taken in the Architectural Exhibition, now being held at Liverpool, under the guidance of the recently-appointed Professor of Architecture, Mr. F. M. Simpson. . . .

The Literature Standing Committee report that since their election on June 11, 1894, they have held nine meetings, making ten meetings altogether since the issue of the last report. They elected Professor Aitchison, A.R.A., Chairman, Mr. Alex. Graham, Vice-Chairman, and Messrs. A. S. Flower, M.A., and R. Elsey Smith, Hon. Secretaries. . . .

Arrangements have been made by the committee for the better preservation of the collection of measured drawings for which the Institute silver medal has been awarded.

The committee desire to call attention to the large number of interesting and valuable works presented to the library during the official year. The librarian's report to the committee is as follows:—

During the twelve months elapsed from April 1, 1894, to March 31 of the present year, the total additions to the reference library amounted to 134 volumes and seventy-five pamphlets, and to the loan library twelve volumes and two pamphlets, exclusive of periodicals, reports, and transactions of societies, and parts of works issued in a serial form now in progress. The number of volumes presented to the reference library was ninety-two, and to the loan library three. Of pamphlets, seventy-three were presented to the reference library, and two to the loan library. Of drawings, engravings, and photographs, sixty-seven sheets and four books were presented, exclusive of the "Sketch-book of the Architectural Association." There were also presented two medals struck by the Corporation of the City of London. The works purchased comprised forty-two volumes, two pamphlets, and one book of drawings, for the Reference Library, and nine volumes for the Loan Library, together with several Parliamentary papers. The attendances of readers in the library numbered 2,838 (last year 2,411), showing an increase of nearly 18 per cent. The number of tickets (exclusive of renewals) issued for admission to the Reference and Loan Library was eighty-three (last year ninety-three). The number of volumes issued on loan was 986 (last year 976). Where so many useful and valuable additions to the library have been made by donation, it is hoped it will be not invidious to make special mention of: a second copy of the Architectural Publication Society's "Dictionary of Architecture," presented by Mr. Arthur Cates; M. Van Ysendyck's great work entitled "Documents Classés de l'Art dans les Pays-Bas," presented by the author; the fine volume illustrating English and Welsh Cathedrals, presented by the proprietors of the *Builder;* and Part VII. of the "Jeypore Portfolio of Architectural Details," presented by his Highness the Maharaja of Jeypore, a worthy continuation (and probable completion) of the preceding parts of this fine work. The new Metropolitan Building Act has called forth several text-books on the subject, and those by Messrs. Craies, Dicksee, Fletcher, Statham, and Griffiths and Pember, have already been presented. Mention must also be made of a very interesting collection of views of Chinese buildings, presented by Mr. F. M. Gratton. The question of binding into a volume a similar collection of photographs of buildings in Sydney, N.S.W., was, by resolution of the committee on March 8 last, remitted to the Sub-Committee on the Library; and being highly desirable as a means of preservation for, and ready reference to, the plates, it is much to be hoped it may be sanctioned and form a precedent for similar cases. Among the purchases may be especially noticed Burdett's "Hospitals and Asylums of the World," a valuable work much asked for by readers, and on several occasions recommended for the Committee's sanction as a purchase. The additions to the Loan Library, though less numerous than could be desired, have for the most part been works really wanted to meet the needs of readers and the increasing demand for standard text-books.

The library rules have been under the committee's consideration, and a fresh set were finally sanctioned by the Council. The new rules were published in the "Kalendar," and have been since hung up in the library. The committee, in pursuance of a resolution of the Council, have considered the general development of the library, and how far it met the convenience and requirements of members and others using it. Their recommendations were duly reported to the Council, by whom they were approved and ordered to be carried into effect.

The Practice Standing Committee report that they have held six meetings since the issue of the last report. They appointed Mr. Henry Currey, Chairman, Mr. Arthur Cates, Vice-Chairman, and Mr. Henry Cowell Boyes, Hon. Secretary. Their attention has been chiefly directed to the further consideration of the form of building contract and schedule of conditions, which have at length been completed and reported to the Council. During the long deliberations of the Select Committee of the House of Commons on the London Streets and Buildings Bill of the London County Council, the Institute was represented by three members of the Practice Committee, Messrs. Cates, Hall, and Rickman, and the committee feel that the Institute may be congratulated on the fact that its labours with relation to this subject have had a material effect on the provisions of the Act as passed.

The Science Standing Committee report that eight meetings have been held during the present session, and there has been an average attendance of eleven members. They appointed Mr. P. Gordon Smith, Chairman, Mr. T. W. Cutler, Vice-Chairman, and Messrs. H. D. Searles-Wood and William C. Street, Hon. Secretaries.

In connexion with the Fund for Experimental Research, the committee has advanced its scheme for making tests of brickwork, by which it is intended to establish what ratio exists between the strength of individual bricks and that of brickwork composed of similar bricks in different kinds of mortar. Professor Unwin has kindly joined the sub-committee, which is entrusted with the details of the proposed experiments, and thanks to the liberality of Sir William Arrol in providing the expensive and necessary apparatus, it is expected that a commencement will be made immediately.

At the invitation of Professor Banister Fletcher, and with a view to the encouragement of good workmanship, the Science Committee have assisted at the Building Trades Exhibition held at the Royal Agricultural Hall. A loan collection of pictures and models from the Institute is included in the exhibition, and several of the members of the committee have acted as judges of the handicraft competitions, and awarded the prizes, which were presented to the successful competitors by the Duke of Fife.

The income and expenditure account and the balance-sheet for the year ending December 31, 1894, were appended to the report.

THE LONDON COUNTY COUNCIL.

THE usual weekly meeting of the London County Council was held in the County Hall, Spring Gardens, on Tuesday, Mr. Arthur Arnold, the Chairman, presiding.

The Works Committee and the Cost of Work.—The greater part of the sitting was devoted to the consideration of a long report of the Works Committee, which included a report of the Works' Manager, Mr. T. Holloway. The report of the Committee showed that as a result of the operations of the Works' Department, extending over two years, there has been a net loss of 2,777*l.*, but that in regard to two of the works carried out—viz., Council-buildings, Yabsley-street, Poplar, and West View Cottages, Blackwall-lane, a very considerable excess over the corrected estimates has resulted—in the first instance 25 per cent., and in the second 30½ per cent. The report shows that the cost of nearly every work carried out above ground has exceeded the estimates, though, on the other hand, sewer work, especially in the case of the Fleet storm relief sewer, has cost considerably less than the estimates. We give the following paragraphs from Mr. Holloway's report, which deal principally with the excess over estimates in the case of the Yabsley-street buildings and West View cottages, these two works being numbered 1 and 2 respectively:—

"When these works were commenced in June, 1893, the Works Department had only just been established. There was practically no office accommodation, and with the exception of myself and two clerks the whole of the staff had yet to be engaged. We had no scaffolding, plant, or tools of any description, and no stores, workshops, or machinery, and I have no doubt whatever that the loss on this account was considerable. Another cause is that when the estimates were made up for these works, the prices were based on the assumption that the workmanship and materials to be put in them would be accepted as satisfactory providing it was equal to that in the best specimens of buildings of this class in London. This, however, was found to be a delusion, and instead of workmanship and materials of good ordinary quality being approved, workmanship of the highest standard and materials of the very best quality were demanded by the officers supervising the works. We had the greatest difficulty in obtaining bricks which were considered satisfactory. Freight after freight of stocks which had been approved of for colour for the work, and from which it was intended to select the facings in the usual manner, were condemned as unfit for facings on account of their not being sufficiently hard, or when hard enough, the colour was not sufficiently bright. Owing to this difficulty in obtaining satisfactory facings, the outside walls could not be built at the same time as the inside, the latter being racked back from the external walls, and to avoid further loss on this account, second malms were purchased at a cost of 12s. per thousand more than we were paying for the bulk of the bricks, and from which bright stocks suitable in every respect for facing could have been picked. The same rig'd line was drawn with respect to the carpenters' and joiners' work. Instead of being allowed to use imported scantlings for floors and roof-framing, which is invariably used for the purpose, most of these had to be cut from deals and planks, adding at least 50 per cent. to the cost, and this was all subjected to the most minute examination, and the smallest amount of sap or shake was sufficient to condemn it. In the case of the joiners' work this supervision was, if possible, more exacting; the work was frequently inspected in the shops and had to be delivered on to the site unprimed, and if a particle of sap or sign of a shake was visible, even if it was in that part of a door or window frame that would be built in or covered by brickwork or linings, it was considered sufficient to condemn it. The other trades were subjected to the same rigorous inspection, the letter of the specification being strained to its utmost limit. This line of action may have been prompted by the desire on a part of officers to discharge their duties in the most zealous manner, but it had a most disastrous effect on the cost; and if the system had been specially designed to make the work carried out by us cost as much as possible, nothing could have been invented better calculated to bring about that result. There is another cause which is, in a large measure, responsible for the

excess, and that is the very heavy bill for wages, which in No. 1 amounts to 6,900*l.*, and in No. 2 to 14,000*l.*, or about 50 per cent. of the total cost in each case, which is 10 per cent. more than it should be; and it is quite certain that in these two cases we did not get the amount of work done by the men that we had a right to expect." . . The manager then refers in detail to each work, the cost of which has exceeded the estimate. In regard to the painting of Hammersmith Bridge, he says, "I can only repeat the substance of my former reports, viz., that owing to the work being done in mid-winter and to the excessive amount of wet weather which prevailed whilst the work was in progress, the fresh paint was so damaged by the rain that a large portion of the ironwork was painted six times instead of four. There was also a heavy loss on the gilding on account of the exposed position during this inclement season. The gold sizing had to be done several times over, and a lot of the gold was blown away or spoiled by the continuous rain. Further, owing to the state of the weather the work was in hand at least one-third longer than it otherwise would have been, the men only making on an average right through thirty hours per week, less than two-thirds of their proper time. On this account the charges for foreman, timekeeper, barges, lightermen and other current expenses which were bound to go on, formed a very much larger percentage of the cost than they would have done had the work been done at a more favourable time of the year. There was also a considerable amount beyond that contemplated expended in scaffolding, as I considered scaffolding would only be required to the towers; but we had to erect it the whole length of the bridge on both sides for extra safety to the men and to comply with the engineer's wishes." The report of the manager concludes as follows:—"In the first two, on which a very large proportion of the excess has been incurred, it is due in a large measure to the very stringent supervision to which the work was subjected. The other portion of the excess is due without doubt to the fact that for some time after the Works Department was established, there was a tendancy on the part of the skilled workmen in our employ not to do the same amount of work for the Council as they would be expected to do for a contractor, and it was only after repeated dismissals that this idea was shaken. The men were evidently under the impression that the foreman had not the free hand in dealing with them that a foreman usually has, and there is no doubt that in some instances the foremen were also under the impression that the conditions were different. As soon as possible the services of the men who had charge of the works that had cost too much were dispensed with. This tendency to give a minimum amount of work for the maximum of pay has, however, been principally confined to the skilled workmen; with the unskilled labour there is, generally speaking, no cause for complaint. This is borne out by the results of the different works, where it is shown that on nearly all our works where skilled labour has formed the chief item in wages, the results have been unsatisfactory; but, on the other hand, where the work has been of such a character that unskilled labour has been largely employed, such as sewer, road and paving works, we have invariably done well. As an instance of this I may mention that the saving on the Fleet storm relief sewer, amounting to 5,670*l.* (which is a fair and reasonable profit on work of this nature considering the great risks that are involved, and which if not properly handled may result in heavy loss), is more than swallowed up in the deficit on the cottages at East Greenwich. In connection with this matter I am afraid the visits of individual members of the Council to our works, who enter into conversation with the men employed there, is apt to be misconstrued. Some of the men store up their grievances, real and fancied, until Councillors go on to the works, when they are related, and often, I am afraid, in a most exaggerated form. Several of the foremen have complained to me of the bad effect this has on the men, and have stated that their authority over them is very much diminished owing to the misconstruction the men place on the effect which the relating of their grievances to these gentlemen will have. This effect is a most pernicious one; and while I do not wish to place the slightest barrier to any real cause of complaint being fully investigated, I am sure very much better results would be obtained if members of the Council would, on visiting the works, refrain from entering into conversation with the men, who have ample means for stating any grievances under which they think they suffer. It will be seen, however, on comparing the total cost of the works with the corrected estimates, that in spite of the unfavourable conditions with which the department has had to contend, the deficit on the first two years' working is very small. The value of the work based on the corrected estimates after the adjustment of additions and deductions is 176,086*l.* 17s. 11d., whilst the total actual cost, including the initial expenses in starting and organising the department, is 178,863*l.* 18s. 6d., or a deficit of about 1½ per cent."

The Committee, in concluding their report, acknowledged that the "most unsatisfactory work with which the Committee has to deal appears to be that of painting. It is clear that painting cannot be done by the Council at the lowest competition prices." The conclusion of their report was as follows:—

"The Committee are satisfied that the painting they do is superior to that done under ordinary contract conditions, but at the same time they are also satisfied that in some cases the painters employed by them have not done as much work as they ought. Steps have been taken to remedy this fault by checking and measuring up the work done from time to time. On the other hand, the Works Committee believe that their men have been compelled in certain instances to paint work in a more expensive style than was necessary. The brickwork and the joinery have also cost more for labour than they should. The Committee does not wish to put the whole blame on the workmen engaged, for the Council certainly obtains work from them of the highest quality, It appears difficult to persuade a workman employed by a public authority to execute any but the highest class of work, even in a second or third-rate building. This fact adds to the difficulty of the Committee carrying out work at competitive prices. In plain work, such as excavating, foundations, road-making, concreting or sewer work, where quality of workmanship cannot vary much, it is clear that work can be undertaken at contract prices. The value of the work now in hand amounts to 230,544*l.*, and, although it is not possible to state anything definitely, the manager believes on the whole that the total cost will be below the total estimate. As to the purchase of the plant and materials, the Committee believe that they have organised this on a thoroughly businesslike footing. Merchants and manufacturers are anxious to deal with the Committee, and they certainly give the most favourable quotations. Tenders are obtained for all materials required with hardly an exception, and it does not appear possible for anyone to buy on better terms. The central works unfortunately are far from complete, and it appears certain that it will be at least another six or nine months before everything is in going order. The space at our disposal is very limited and cramped, and thus it is only possible to erect the new works in a piecemeal fashion; the ordinary work is being done at the same time at every part of the yard. The extension of the wharf an average of 73 ft. into the river is progressing favourably, and it will form a valuable addition to the Council's property. We recommend—

'That in the cases in which the actual cost of the above works has exceeded the original or amended estimates, the amount expended in connexion with the works be approved.'"

Lieutenant-Colonel Ford moved as an amendment that the following words be added—

"And that the report of the manager of works set out in this report be referred to each of the Committees upon whose recommendation any of the works referred to in this report have been carried out, with instructions to report to the Council without delay."

Sir J. Blundell Maple, M.P., seconded.

A long discussion followed, which has been reported at considerable length in some of the daily papers, and under these circumstances we need not devote any space to it.

Colonel Ford's motion was lost on a division, 60 voting for it and 69 against.

Mr. Westacott then moved to add these words to the Committee's recommendation—

"That the Committee be instructed to prepare and bring up a report making suggestions for preventing estimates being exceeded in future, and that the Works Committee do report forthwith the particulars of the jobbing works done during the existence of the Works Committee, together with the value placed on such works by the officers under whose orders and directions such jobbing works have been carried out."

Dr. Collins seconded, and the amendment was agreed to.

Mr. Beachcroft moved to add words to the effect that the Council found no reason for attributing to the architect or his department any responsibility for the increased cost of the buildings in Yabsley-street and Blackwall-lane.

In this connexion the Public Health and Housing Committee brought up a report containing another report from the architect, Mr. Thomas Blashill. In the course of this report, Mr. Blashill said he had no doubt the manager had made his statement as to the relations between the workmen and the members of his committee under the gravest sense of responsibility, and he saw no reason for differing from it. He was, however, strongly of opinion that he might have attached more importance than he did to the circumstances under which the Works Department was called hastily into being. He had strongly advised that in the first instance, small jobs only should be undertaken, so that experience might be gained. But when the Works Department was organised it was found necessary upply it with the whole of the work that could possibly be handed over to it. Much of its earliest work was necessarily experimental, and some of its methods were, in his judgment, not calculated to be successful. It would be quite unfair to charge against against the workmen the whole of the excessive cost of labour. A very large proportion of this excessive cost was really due to delay in the purchase and delivery of particular materials, and to the purchase from different makers of the several parts of the same fitting, which parts when brought together could only be adapted by altering them upon the job. A good deal of material was actually sent down to the jobs which was not wanted there at all. He had no means of knowing whether that had been charged to these jobs. A good deal of work was executed in spite of his warning that it was being wrongly done. No doubt the cost of making that good was charged to the job.

Colonel Rotton seconded the amendment, which was supported by Alderman Ritchie, who said that the position occupied by the architect was a most anomalous one.

After further discussion, the closure was passed, and 60 voted for, and 47 against, the amendment. A division was called, when there voted 66 for and 52 against.

Mr. Taylor moved a further amendment exonerating the works manager and his department.

Mr. Burns seconded, on the ground that the whitewash of the architect's department was unnecessary.

Sir John Lubbock said he had never attacked either the works manager or the department; he had only attacked the principle. The loss was not 2,000*l.*, but 16,000*l.* It was absurd to suppose that the money had been lost without somebody being responsible.

On a division, 54 voted for and 54 against.

The Chairman said that under the circumstances that the Council had resolved to have a further report upon that matter, he had decided not to give his casting vote.

It was now after seven o'clock, and the debate stood adjourned. The Council shortly afterwards rose.

Illustrations.

THE PALACE OF BHOWNUGGER.

THE Palace at Bhownugger is for His Highness Takhtsinghi, G.C.S.I., Maharajah of Bhownugger, who is one of the most enlightened and advanced of the Native Princes of India. He visited England the year before last, and was most cordially received by Her Majesty the Queen. He was present at the opening of the Imperial Institute, to the funds of which he was a most liberal contributor. He also had the honorary degree of LL.D. conferred upon him by the University of Cambridge.

He has hitherto expended his surplus revenues in the improvement of his State by the construction of railways, schools, public libraries, and hospitals, and is now wisely providing a suitable home for himself.

The Palace will comprise on the ground floor State reception and banqueting rooms, and picture gallery, Durbar hall, and secretarial offices, His Highness's private rooms, and zenana, with separate entrances to, and internal communication between, each department, and on the first floor His Highness's private rooms, and rooms for ladies of the zenana, and their reception-rooms and servants' quarters.

The roof will have terraces and walks all round over the verandahs.

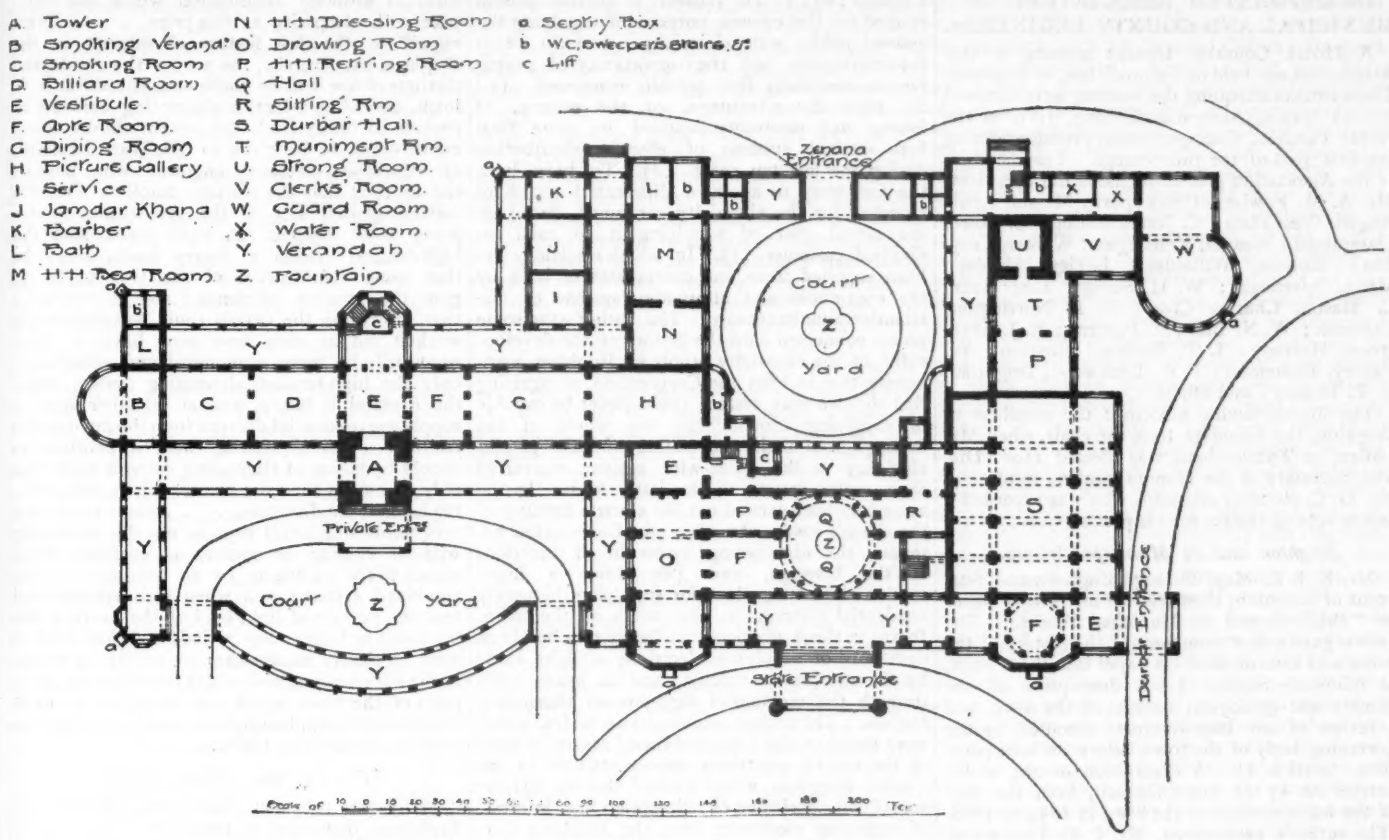
The Durbar hall will be constructed of a fine grey sandstone, with an intermixture of stone of a reddish colour, and the exterior masonry of the Palace generally will be similar.

Internally the State entrance-hall will be lined with white marble and columns of pink granite from Italy. It is two stories in height, with two tiers of arcading, the rooms on the upper floor forming galleries all around it. It will be roofed by a dome of iron construction, the soffite being formed of teak ribs with richly coffered panels of plaster, all gilded with the dull Indian gold, and lighted from the top by an eye filled with stained glass.

The floors of entrance-hall and corridors are to be of marble. The fountains in the centre of the hall, zenana quadrangle, and courtyard to private entrance, will be of marble and bronze.

The finishings internally will generally be of teak and plaster. The tower shown will contain a large tank for water supply and fire service.

W. EMERSON.



Ground Floor Plan, Palace for the Maharajah of Bhownugger.

A TOWN CHURCH.

IN this design for a church, one or two features have been introduced which, perhaps, call for comment. The site being surrounded at the side and back, the west front and interior have therefore more elaborate detail than the other portions. The nave, which is 50 ft. wide between the walls, is divided into five bays, 15 ft. centre to centre, and the aisles either side have been made purposely narrow, being intended for passageways only. Over these aisles are small galleries running the whole length of the nave, and supported on arches springing from the main piers.

The organ is placed over a vaulted stone screen at the entrance to the chancel. It is divided into three bays, the centre one having bronze gates. The main piers go the whole height of the church, and have semicircular arches springing from them, both across the nave and along it. The height which this treatment would give, and the effect of the long, narrow, 2-light windows in the outer walls above the galleries should help to attain an imposing interior.

The chief feature of the west front is the large 7-light window, which occupies the whole space between the two angle turrets.

The materials intended to be employed are Portland stone, red bricks, and lead roofs.

The drawing was exhibited in last year's Royal Academy. SIDNEY K. GREENSLADE.

DESIGNS FOR ELECTRIC LIGHT BRACKETS.

THE opportunities which electric lighting affords for novelty in the artistic design of fittings have, for the most part, been made little use of. In the illustrated catalogues of electric lighting firms we find designs for ornamental burners, but of these in general the less said the better—we have pleasure, therefore, in publishing two designs for electric light brackets, modelled by Miss Esther M. Moore, which in the true sense are artist's work. The design, with the tray at the bottom, was intended for a lamp for a writing-table, the tray for pens, &c. The ball could be charged and would last twenty-four hours, but it could also be connected underneath the lamp. This lamp was exhibited in the Summer exhibition at the New Gallery last year, and is now on view at Messrs. Bellman, Ivey, & Carter's, New Bond-street. The design for the bracket was exhibited at the last Arts and Crafts Exhibition. The moth, or rather locust, is arranged so as to throw the light downwards. It is modelled in wax, and has not yet been reproduced in bronze.

A CASKET FOR A PRESENTATION ADDRESS.

THIS beautiful piece of work was made by Mr. Thos. Elsley, from the design of Mr. J. F. Bentley, the architect, to contain the address which was presented to Sir Stuart Knill about eighteen months ago by a number of Catholic friends on the occasion of his retirement from the office of Lord Mayor of London.

The fact that the address was especially a kind of demonstration on the part of co-religionists accounts no doubt for the very ecclesiastical turn given to the design, which, as we heard it remarked, suggests rather a reliquary than an address casket. That, however, is a matter of taste and sentiment with which we have no concern. It is a beautiful and original design in silversmith's work, and we may take the opportunity of pointing out the difference between this kind of production, the individual work of an artist, and the kind of "shop" design which is usually turned out for address caskets, and gets engraved in the *Illustrated News* or the *Graphic*, accompanied by the commendatory remarks of the press reporter. If those who are concerned in the presentation of ceremonial addresses and other things for which "caskets" are required, would do as Sir Stuart Knill's friends did—go to a man who is an artist and ask him to make a special design, instead of ordering a casket across the counter of a shop—we should more often have the chance of seeing, as in this case, a work which is a pleasure to look at and a credit to English art, instead of a piece of showy commonplace.

NEW PREMISES, TOTTENHAM COURT-ROAD.

THESE premises are the realisation of the endeavours of Elizabeth, the blind daughter of the late Bishop Gilbert, of Chichester, who, having lost her eyesight in childhood, devoted the rest of her life to the amelioration of the troubles of her fellow sufferers, by having them taught trades in which sight is not necessary, such as the manufacture of brushes, brooms, baskets, mats, rugs, mattresses, sash-line, wool-work, chair-caning, and firewood-chopping, &c.

In May, 1854, Miss Gilbert hired a cellar in New Turnstile, Holborn, at 1s. 6d. a week, where her benevolent work was commenced. This Institution ultimately developed into "The Association for Promoting the General Welfare of the Blind," with premises at 127, Euston-road. In 1865 the Association removed to 210, Oxford-street, and thence to 28, Berners-street. Miss Gilbert died in February, 1885, leaving a large sum of money, partly her own means and partly collected by her, as the nucleus of a fund for providing permanent premises for the Association. In 1891 a building agreement was entered into with the Duke of Bedford for the present site in Tottenham Court-road, upon which the buildings were erected from the designs of Mr. C. Fitz-Roy Doll.

On the different floors workshops are provided for the manufacture of all the articles enumerated above, both for male and female operatives.

The elevations are faced with red bricks from the Heather Brick Company, the dressings being Ancaster stone, from the Lindley quarries. Messrs. Allen & Sons, of Kilburn, were the general contractors, and Mr. G. March acted as clerk of the works.

The cartoons for the sgraffito were drawn by Mr. S. Erat. Harrison, and the work was executed by Mr. C. H. Walton.

The drawing was exhibited at the Royal Academy last year.

COTTAGE STUDIO, NORTHWOOD.

THIS house stands on high ground close to the station, and enjoys fine views over the adjoining hills and the Ruislip Reservoir.

It was built to the special requirements of Enoch Ward, illustrator, in a particularly sound manner, with special mouldings throughout.

Externally, the walls up to the first floor are of red facings laid with a weathered joint, and the upper part is faced with cement, finished smooth, to receive a varied tinted surface.

The doorway and adjoining windows are of stone. The timber externally is of teak, left as from the saw, and pegged together, the roof being covered with Broseley tiles.

The studio is 26 ft. by 18 ft., with large plate-glass windows facing north, and ingle-nook at one end. The floor of the studio is 18 in. below the ground-floor level, which contains two sitting-rooms, a square hall, with three bedrooms, bath, &c., over.

Above the studio and raised by four steps are two attics; thus the studio is 13 ft. high, whilst the smaller rooms are about 9 ft. high. There is space in the roof for four more bedrooms, and the joists and roof are prepared to receive the same if required. The architect was Mr. J. Nixon Horsfield, of Kingston-on-Thames.

INCORPORATED ASSOCIATION OF MUNICIPAL AND COUNTY ENGINEERS.

A HOME Counties' District meeting of this Association was held on Saturday last, at Brighton. The members attending the meeting were received by the Mayor, Alderman Botting, J.P., in the Royal Pavilion, that gentleman presiding during the first part of the proceedings. The members of the Association present included the President, Mr. A. M. Fowler, of Stockport; Messrs. Lewis Angell, West Ham; C. Jones, Ealing; C. Lowe, Hampstead; Weaver, Kensington; Walker, Croydon; Robson, Willesden; Lobley, Hanley; Mann, Sevenoaks; W. H. Savage, East Ham; C. Mason, Charing Cross; J. P. Norrington, Lambeth; W. N. Blair, St. Pancras; E. J. Lovegrove, Hornsey; J. P. Barber, Islington; W. Fairley, Richmond; P. C. Lockwood, Brighton; E. P. Hooley; and others.

The Mayor having welcomed the members to Brighton, the President took the chair, when Mr. Laffan, of Twickenham, was elected Hon. District Secretary of the Home Counties, in place of Mr. O. C. Robson, resigned, who was accorded a hearty vote of thanks for his past services.

Brighton and its Municipal Works.

Mr. F. J. C. May, Borough Engineer and Surveyor of Brighton, then read an interesting paper on "Brighton and its Municipal Works." The author gave a short summary of the history of the town, and then divided his paper into three parts, as follows:—Section I.—A description of the climate and geological features of the town, and a review of the improvements executed by the governing body of the town before its incorporation. Section II.—A description of the works carried out by the Town Council, from the date of the incorporation of the town in 1854 to 1888. (The author's predecessor, Mr. P. C. Lockwood, was Borough Surveyor during the greater part of the period—*i.e.*, from 1858 to 1888.) Section III.—The works carried out by the Town Council from 1889 to 1895, the period during which the author had acted as Borough Engineer and Surveyor. In the first period much attention was given to groyning by Mr. Lockwood, the result being the reclamation of more than twenty-three acres from the sea, enabling the Corporation to increase the width of the carriage-ways and esplanades on the Front. The author also enumerated the improvements carried out on the Front during this period at a cost of nearly 75,000*l.*, exclusive of groynes and sea walls. The purchase and laying out of Preston Park, the erection of the Sanatorium, the overhauling of the drainage system, and the laying of the great intercepting sewer, 7¼ miles in length, from the western boundary of Hove to the outfall at Portobello, at a cost of 104,608*l.*, and the purchase of the Waterworks in 1872 at a cost of 352,000*l.* were also alluded to, and this section of the paper closed with a description of the North-road Baths, opened in 1871 at a cost of 1,888*l.*, and twice enlarged at an expenditure of 4,034*l.* in 1874, and 575*l.* in 1885, and of the Park-street Baths, opened in 1888, at a cost of 5,544*l.* Coming to the description of works executed in or since 1889, the author described the Shelter Hall and terrace built on the Madeira-road in 1889-90 at a total cost of 14,029*l.*; the electricity-generating station in North-road, the purchase of "Queen's Park" by the Race Stand Trustees for 13,503*l.*, and the gift from them to the town, the recreation-ground in Southdown-road, presented by Alderman Blaker, and the acquisition of the Bird Museum in Dyke-road by bequest from the late Mr. E. Booth. The cottage baths in Brunswick-place and Cobden-road were also alluded to, and a detailed description given of the new swimming bath in barrack-yard. Allotments, condemned areas, the abattoir, the extensive sewage works in progress, the destructor in course of erection, and sea defences were all touched on, and the author mentioned as works in contemplation, in addition to sea defences, the municipal buildings improvement scheme, technical schools, alterations and extensions of the buildings on the Pavilion Estate, to form new Free Library and reading-rooms, museums, and picture and art galleries, and the new sanatorium.

At the close of Mr. May's paper, he was accorded a hearty vote of thanks on the motion of Mr. Lewis Angell.

The Brighton Electricity Supply.

Mr. Arthur Wright, Electrical Engineer and Manager of the Corporation Electricity Works, then read a paper, entitled, "Points of Interest in the Development of Electricity Supply at Brighton." He said that as far as he was able to determine, Brighton was the first town in England:—(1.) To possess a central station erected for the express purpose of supplying the general public with electricity. (2.) In which the inhabitants had the opportunity of paying for the electricity they actually consumed. (3.) To have the advantage, or the reverse, of having had electricity supplied by more than four distinct systems of electric distribution during the last ten years. (4.) To have been the first town to adopt a differential system of charging for the electricity consumed, based on the actual cost of supplying it to each individual customer. (5.) In which electricity has been supplied from one central station, both by the continuous and alternating systems of distribution simultaneously. The author gave some points connected with the history of the development of the electricity supply in Brighton, mentioning that in 1893 the Corporation, recognising that the two-wire system could never be capable of supplying economically the whole of the borough from their one station, and the greater efficiency of the three-wire system, converted their entire system to the latter form. In the same year they carried out the electric lighting of the King's-road. In 1894 the Corporation extended the distributing mains in all directions of the borough, and put down a high-tension alternating plant for supplying the purely residential districts in the north of the town. It was in these districts that the system had been developed of supplying electricity at light loads by the continuous current, and at heavy loads through the medium of high-tension alternating feeders. The author exhibited two tables, which were based on the latest published results of most of the central electricity supply stations in the United Kingdom, which showed that in 1894 the actual cost, exclusive of redemption and interest, of supplying electricity from the Brighton Corporation station, was less than from any other central station in Great Britain, and that the sale of electricity per inhabitant, taking all the towns having more than 50,000 inhabitants, was greatest in Brighton. When it was recognised that at the end of this year the capital sunk in the Corporation Electricity Works would probably reach 160,000*l.*, that nearly a million units would be sold during the year, that most of the principal streets would be electrically lighted, and that the annual consumption of electricity per inhabitant would in all probability reach the high figure of eight units, it would be seen how rapidly the electricity undertaking was developing. The author next considered the two most distinctive features of the Brighton Corporation electricity supply, viz., the method of charging for electricity consumed, and the system of distributing it in the residential scattered districts. He said that "the total monthly expenditure depends much more on the maximum rate at which the generating plant has to supply electricity during any year, than on the actual amount of electricity that has been supplied. This fact he recognised in April, 1883, when, before meters were devised, he charged the consumers supplied by the old Hammond Company 6s. per arc lamp per week, and 1s. 6d. per carbon used; and after meters had been devised for the incandescent service, the charge was made at the rate of 1d. per lamp hour if the lamps were not used three hours per day, and a ½d. otherwise. The present method of charging for electricity consumed, adopted by the Brighton Corporation, is an improvement on the above system, but still based on the same principles. In 1895 the charge for electricity consumed by anyone in Brighton is reduced to 3d. per unit as soon as the proper proportion of cost of having to be ready to supply that individual has been paid for by the revenue derived from his previous consumption in the same half-year, being charged at 7d. per unit. This, in the year 1895, happens to be after the use of his greatest demand for one hour per day on the average. By means of this equitable tariff the Corporation are enabled to offer consumers who use their demand regularly four hours a day, electricity at 4d. per unit, although coal costs the Corporation over 20s. a ton. All electricity consumed in Brighton, whether it be by private individuals or by the Corporation for street lighting and other purposes, is charged on this basis. The cost of supplying electricity diminishes rapidly in Brighton according to the length of time the demand is used per day, and for street lighting (the demand being used in this case on the average nearly eleven hours per day, under which circumstances electricity can be supplied at 2d. per unit with a fair margin of profit), the time cannot be far distant when every street in the neighbourhood of the distributing mains will be electrically lighted, for there is no other suitable form of artificial illumination which can compete with electricity at this price. . . . With regard to the last feature of interest in the Brighton system, viz., the use in the residential districts of low-tension continuous current at light loads, and of high-tension alternating currents at periods of heavy load, the author thinks much credit ought to be given to Mr. Ward Leonard, an American electrical engineer, who pointed out in 1892 that the obvious corollary from the well-recognised fact of the low-tension system being most efficient at light loads and the high-tension system at heavy loads, must be that some combination of the two ought to give the greatest efficiency; and it was clear that, providing the details could be satisfactorily worked out as they have now been, it must necessarily be more economical and safer to run only the high-tension alternating system when the demand is heavy, and at all other times to supply the residential districts from the low-tension continuous-current system, than to continue to supply by means of alternating currents when the only reason for their use has ceased to exist, viz., big loads at big distances. . . . As meters are now procurable which will register equally accurately with alternating or continuous currents, there seems to the author to be no objection to this combined system; and when it is remembered how the periods of light load on the average last ten times as long as the periods of heavy load, it must be clearly unnecessary to supply by means of the high-tension feeders and transformers, those parts of the town which can be so much more economically supplied by low tension through the ordinary distributing mains. . . . "

The Brighton Water Supply.

Mr. James Johnston, Corporation Waterworks Engineer, then read a paper on "The Supply and Distribution of Water at Brighton." He explained how the water supply for the Brighton Corporation district was obtained by the intersection of fissures in the chalk by adits or headings driven from wells. The central wells were sunk to a depth equal to about mean sea level, and the adits were driven at that depth and in directions approximately parallel to the coast line, so as to cut the fissures at right-angles. These adits varied in size, ranging from 18 ft. high by 12 ft. wide to 7 ft. high by 6 ft. wide. Each had a grip cut along one side to convey the water to the pumps at the central wells, in order to keep the workings dry during progress. The roof was slightly arched, but this was not always necessary, as the chalk was so hard that frequently chisels and sledge-hammers were required to burst it, picks being of not the slightest use. At the Lewes-road Works—situate about 1¼ mile from the shore—there are two pumping wells 93 ft. deep, connected by adits, and leading from these there are about 2,152 ft. of adits. The Goldstone Works, from which the main supply for many years has been taken, are about 2 miles west from the Lewes-road Works, and about 1⅓ mile from the sea. The fissures here differ greatly from those at the Lewes-road works. At the latter place they are more numerous, though smaller and individually less productive, whereas at Goldstone they are found at considerable intervals, and in some instances yield 1,500,000 gallons per day. The pumping wells are 168 ft. deep—connected as at Lewes-road—with 2,530 ft. of adits. The engines, like those at Lewes-road, are erected directly over the wells, which for convenience are elliptical in shape, measuring 12 ft. by 8ft. across their longer and shorter axes respectively, the centres of the beams being over the centres of the wells. There are two deep-well pumps at the bottom of the wells, worked from either side of the centres of the beams. These pumps lift to the low service reservoirs adjoining the works, but there are also force pumps driven by the same engines, which take their suctions from the deliveries of the deep-well pumps, and lift the water into the various higher reservoirs. The exhaust steam is condensed by jet condensers, and delivered into cooling ponds in the ground of the works. In connexion with the Goldstone Works are smiths', fitters' and turners' shops, in which the whole of the repairs for the various pumping stations are done, as well as all the jobbing engineers' work of the other Corporation departments. The Patcham pumping station is about 3 miles from the sea front, and on the western side of the London, Brighton, and South Coast Railway Co.'s main line to London. These works are at present in course of development, and there is one high-pressure compound surface-condensing engine, geared to drive two sets of three-throw deep-well pumps, which together are capable of

lifting 1,500,000 gallons per day into the middle service reservoir at Islingword-road. The pumping well is 175 ft. deep to the bottoms of the adits, which at the present time are about 1,455 ft. in length. The engine is steamed from two Lancashire boilers working at 120 lbs. pressure. In order to keep the water supply well in advance of the somewhat abnormal increase in the population (due, no doubt, to the close proximity of Brighton to the metropolis), the Corporation has authorised a further extension of the adits, and to this end a new well has been sunk adjacent to the one now in use. There is also in course of erection for this station a very powerful inverted direct-acting three-cylinder triple-expansion surface-condensing engine of the marine type, working one set of three-throw pumps, each being directly connected to one piston-rod, and driving also two deep-well pumps by a connecting-rod from one end of the crank-shaft and bell-cranks over the well. This engine will be able to deliver 3,000,000 gallons per day into the highest service reservoir, the total head, including friction in the mains, being 500 ft. Two Lancashire boilers, for a working pressure of 120 lbs., are also on order to augment the existing boiler power. At the Islingword-road reservoir is one of Bailey's hydraulic motors, driven by passing the necessary water from the high service reservoir at Park-road into the former, from which the motor takes its suction, the difference in levels being 80 ft. This motor delivers either into the highest service reservoir on Race Hill or into the Warren reservoir to supply the Warren Farm Schools. The exhaust water from the motor is delivered into the Islingword-road reservoir, and thence into the service mains; the only expense, therefore, being that due to pumping the extra water required into Park-road reservoir, together with the repairs, &c., to the motor. In consequence of the physical features of the country in which the waterworks district is situated, the system of supply has been arranged in five zones, or service districts, each supplied from separate reservoirs with its own system of mains. By this means the expense of lifting the water higher than necessary, as well as undue pressure on the lead pipes and fittings, has been avoided. Ample pressure is thus provided for each zone, and in case of necessity the water can be let down from the highest to the lowest zone through a system of division valves, the water from the higher reservoirs being prevented from entering the lower ones by self-acting valves placed in each reservoir. Four of the zone districts are each supplied from two reservoirs with mains connecting them, the reservoirs being practically at the same level, but one on each side of the town. The Lewes Road and Goldstone engines pump into the reservoirs nearest them, and the water levels balance themselves by gravitation, thus keeping an equal pressure throughout each zone. The zones are known as the Low, Middle, High, Higher, and Highest Service Systems. The total capacity of all the reservoirs is a little over 9,250,000 gallons, but these are not intended so much for storage as service purposes, the storage being naturally formed in the chalk from which the water is obtained. These reservoirs are built of brickwork in cement, and formed in the chalk. Puddle has not been used, but the insides are lined with two courses of tiles set in neat cement; they are covered in with brick arches 4½ in. thick, which spring from piers and jack arches, and from 12 to 18 in. of mould is laid in the covering arches. By this means the water is kept cool and pure, and the growth of vegetation which so quickly takes place in chalk water when exposed to light and air is prevented. In fact, as has often been stated, from the time of its leaving the adits the water is not exposed to the light until it is drawn from the taps by the consumers. The quantity of water supplied for all purposes during the financial year ending March 31 last, has been 1,973,000,000 gallons. The population, estimated on the census returns of 1891, is over 150,000; but in the fashionable season of Brighton, and on many other occasions, it is computed that there are in addition from 30,000 to 50,000 visitors. As Brighton is essentially a health resort, the waterworks committee allows the fullest possible use to be made of the water-supply by the inhabitants, and the whole of the sewer-flushing and street-watering is done with fresh water. On the purchase in 1854 of the Brighton, Hove, and Preston Waterworks Company—which was constituted by an Act passed in the year 1834—by the Brighton, Hove, and Preston Constant Service Waterworks Company, it was found necessary to lay a duplicate set of mains in every street, so as to comply with the statutory obligations to give constant service, the previous company's supply having been only intermittent. This was necessitated through the new company being unable to keep up the supply in consequence of the enormous waste of water caused by the old fittings in the houses. These old intermittent mains are now to a great extent done away with. The Corporation insists upon a constant supply being given to every new house, and the few remaining intermittent services are gradually being changed to the constant system. The intermittent mains have either been changed into constant (after the regulations have been complied with as regards house fittings), or taken up or cut off and left "dead" as they fall into disuse. For fire-extinguishing purposes fire-engines are quite unnecessary, as by working the division valves a pressure of water can always be given, and as much as 400 feet can be supplied in many parts of the district by this means. Fire hydrants are fixed at convenient distances in every street, and in some cases special mains have been laid for this purpose. The charge for water for domestic purposes is 9d. in the £ of the Poor Rate Assessment, and by meter in a sliding scale commencing at 1s. 3d. and ending at 7d. per 1,000 gals., in addition to a small rental for meter; a minimum charge, however, being made of 5*l.*, for which 80,000 gals. are allowed. Water is supplied to the local authorities at 5d. per 1,000 gals.

At the close of the reading of this paper, votes of thanks were passed to Mr. Wright and Mr. Johnston, and the Conference then rose. Luncheon was provided in another part of the building, by Mr. T. Wilkinson, one of the firm of contractors carrying out the outfall works, who was accorded a hearty vote of thanks by the members and guests.

In the afternoon visits were made to the new Swimming Bath, in Barrack-yard; the Electricity Station, North-road; the Storm Water Outfall at the Norfolk Groyne; the Storm Water Outfall at the Albion Groyne; the Abattoir; the Destructor in course of erection; and the Preston-park. The gathering concluded with tea in the Pavilion, which was provided by the Borough Engineer, Mr. May.

THE SANITARY INSPECTORS' ASSOCIATION.

AT the May meeting of this Association, held on the 4th inst., at Carpenters' Hall, a paper, illustrated by numerous diagrams, was read by Mr. J. Young (Battersea), on "The Dwelling-House from a Sanitary Point of View," a portion of the matter introduced being taken from the prize essay "On the Ventilation of Dwelling-Houses," which gained for the reader of the paper a "gold medal" five years ago. The author referred to the valuable by-laws made by the London County Council since the passing, in 1890, of the General Powers Act, these by-laws rendering it now unlawful to erect houses upon "made" sites until any deposited fecal, animal, or vegetable matter, dust, or other refuse had been excavated, removed, and replaced by a layer of good concrete at least 6 in. thick. Nor is it now lawful to build on any portion of a site which is below Trinity high-water mark, or which will not admit of being drained into existing sewers. Unfortunately, in many districts, these salutary regulations, through the neglect of the officers entrusted with carrying them into effect, remained a dead letter, whole streets of houses being still built by speculating house-builders, on land on which there was no trace of concrete. Among the matters requiring attention, beyond those provided for by the Act and the by-laws, was the lowering of subsoil-water to at least 5 ft. below the ground or basement floor, for at certain seasons of the year there was the greatest reason to believe the rising of the subsoil water was a frequent cause of danger to the occupants of houses, particularly those in low-lying districts. Besides the salutary and indispensable concrete, it was important to insist on proper damp courses to prevent wet from rising up into the walls by capillary attraction. Inspectors should always remember that a dark house usually meant a badly-aired and a dirty house, and all dark staircases, corridors, and corners, or closets not lighted should be unhesitatingly condemned. With regard to "ventilation," the lecturer referred to the readily-opened sash window which would afford a ready means of "flushing rooms with fresh air" as one of the principal points to be exacted, and he described a simple arrangement by providing a deep lining or bead inside the lower sash which secured that only one current of air should enter at the window, and that in an upward direction. Inlets for the admission of warmed air in connexion with Sir Douglas Galton's fire-grate were recommended. Rooms should also have air outlets as well as inlets, the former being near the ceilings, but they should be completely disconnected from smoke-flues. Specially constructed flues should be built alongside the smoke-flues, each room having its own separate outlet, and these flues should all be carried up to the same height above the roof, with a protecting-cap or cowl to prevent down draught. Water supply must be as closely looked after as the supply of pure air. Where, as in most parts of the metropolis, the supply was still intermittent, cisterns could not, unfortunately, be dispensed with, but they should never be of lead, but of glass, glazed stoneware, or slate, and care should be taken that no cistern employed to supply drinking-water should also be employed to supply water- or slop-closets. The pipes should, if possible, be of tin, or have tin-linings, but the evils resulting from the use of leaden pipes in some districts were not so great in districts supplied by the water of the Thames or the Lea, which did not appear to appreciably affect the lead-pipes, through which it passed more or less rapidly, as it did the cisterns with which the water remained much longer in contact. With respect to drainage, the lecturer thought there was great need for uniformity of action among sanitary inspectors. The modern drains put in by jerry-builders, were very different constructions from those great *cloacæ*, some of which still existed in Rome after more than 2,500 years of good service. The lecturer entered, with considerable detail, into the construction, ventilation, and trapping of drains, the means of preventing the accumulation of sewer gas and its entry into the dwelling-house; and this portion of the paper concluded with a summary statement of the returns obtained from forty Metropolitan parishes respecting the provision of disconnecting-traps and inspection-chambers. Disconnecting-traps are insisted upon in connection with house-drains in Battersea, Bermondsey, Camberwell, Chelsea, Fulham, Hammersmith, Hampstead, Holborn, Islington, Kensington, Lambeth, Limehouse, Paddington, Poplar, Rotherhithe, St. George's (Hanover-square), St. George's (East), and St. George's (Southwark), St. Giles, St. Luke's, St. Martin's-in-the-Fields, St. Marylebone, St. Mary (Newington), St. Pancras, St. Saviour's (Shoreditch), Strand, St. James's (Westminster), St. Margaret's, St. John's (Westminster), and Wandsworth. In Bethnal Green they are not demanded, and in Clerkenwell they are only compulsory in the case of new property. In Plumstead they are allowed in special cases, but are not required, while at Stoke Newington and one or two other parishes no definite decision has yet been arrived at by the authorities with regard to them. In Whitechapel they are required where possible, and in the majority of parishes where the disconnecting trap is insisted upon, inspection chambers are also required. It was satisfactory to find that in very few parishes were plunging shafts now allowed, which afforded, in the opinion of the lecturer, no adequate means of inspection in houses having no forecourt under which drains might pass. The practice with regard to the position of the trap was very varied. In some it may be in a vault or a cellar, in others it may be fixed under a public footway, while in Camberwell and Shoreditch it is introduced immediately at the back of the house. No replies to the questions were furnished by Greenwich, Hackney, Lewisham, Mile-End Old Town, St. Olave's, or Woolwich.

An animated discussion followed, a very cordial vote of thanks being accorded to the lecturer.

COMPETITIONS.

COUNTY BUILDINGS, DURHAM.—The Durham County Council has awarded the first premium in this competition to the authors of the design marked "Onward" (Messrs. Cooksey & Cox, 19, Craven-street, Charing Cross, W.C.), and the second premium to the authors of the design marked "Demos" (Messrs. Barnes & Coates, 41, Fawcett-street, Sunderland), subject to clause 29 of the instructions, which requires the successful competitor to obtain, at his own cost, a *bonâ fide* tender from some well-known contractor of good standing, and approved by the Committee, to carry out the work for the amount of his estimate.

BOARD SCHOOLS, ENFIELD.—The assessor in this competition, Mr. Macvicar Anderson, to whom the ten competitive designs for the

Chesterfield-road School, Enfield, were submitted, has placed first the plan sent in by Mr. G. E. T. Laurence, of Queen Victoria-street, that by Mr. Jones, of Harley Lodge, Bush Hill Park, being placed second. The Board have resolved, subject to the approval of the Education Department, to accept Mr. Laurence's design. The school will accommodate 1,194 children, in three departments, with an assembly hall for their joint use. Cookery and manual instruction rooms are also included in the scheme. Provision is made for a future infants' assembly hall.

COTTAGE HOME AND SCHOOLS, STYAL, CHESHIRE.—The award made in this competition by the Assessor, Mr. John Macvicar Anderson, was as follows:—First Premium, "A Home" to Messrs. Charles Clegg & Son, of 104, King-street, Manchester; Second, "Q.E.D.," Mr. J. W. Beaumont, of 10, St. James's-square, Manchester; Third, "Village Homes," Messrs. W. Telford Gunson & Sons, of 10, Marsden-street, Manchester. The Assessor in his report says that, so far as merit in design and adaptability is concerned, he has no hesitation in placing the plans of "Snowflake" first, but as, in these, accommodation is only shown for 286 children, instead of 300, he has in consequence reluctantly felt compelled to disqualify the same. The Guardians have, however, decided to adopt the plans of "Snowflake," whose author, Mr. J. B. Broadbent, of 1, Princess-street, Manchester, has been entrusted with the carrying out of the work.

CREWE SCHOOL OF ART AND WOMEN'S INSTITUTE.—The Technical Instruction Committee of the Borough of Crewe invited the following architects to send in competition designs for their new buildings, viz.:—Messrs. J. W. Beaumont, G. E. Balshaw, Chapman & Snape, Ford & Slater, J. Lane Fox, J. D. Mould, Jas. Stevens, Woodhouse & Potts, and Woodhouse & Willoughby. Messrs. W. Sugden & Son, F.R.I.B.A., Leek, were appointed assessors. They placed first the design numbered 7, and this decision has been accepted by the committee. When the sealed envelopes were opened, the author was found to be Mr. Jas. Stevens, F.R.I.B.A., 88, Mosley-street, Manchester.

BOARD SCHOOL, WILLESDEN.—The assessor in this competition, Mr. Macvicar Anderson, has awarded first place to Mr. G. E. T. Laurence, of Queen Victoria-street, and the School Board has accepted the design. The school is planned to accommodate 1,250 children on three floors, with a central hall on each floor. A cookery and laundry-centre is also provided.

ARCHITECTURAL SOCIETIES.

LIVERPOOL ARCHITECTURAL SOCIETY.—On the 6th inst., the annual meeting of the Liverpool Architectural Society was held in the Law Association Rooms, Mr. Henry Hartley, F.R.I.B.A., presiding. The annual report stated that the Society numbered 129 members, as compared with 130 at the close of the previous year. The committee expressed regret that the new school of architecture had not been so well attended as had been hoped at first. The receipts amounted to 110*l.* 15s., and there was a balance in hand, after meeting expenses, of 7*l.* 7s. Mr. A. B. Culshaw was elected President for the next session; Messrs. H. W. Keef and J. Woolfall, Vice-Presidents; Mr. J. W. Blakey, librarian; Mr. James Dod, treasurer; and Mr. Henry L. Beckwith, secretary. Mr. Hartley, in bringing the proceedings to a close, said that the most important event which had taken place during his period of office had been the establishing of a School of Architecture and Applied Arts, and the appointment of Professor Simpson to the Chair of Architecture of the University College. He congratulated the Society upon the fact that Liverpool was the first centre which had taken upon itself to establish such an educational work. He also congratulated the profession generally upon the accomplishment of a scheme which had been so long desired and so long looked forward to—namely the formation of such a school as a great centre from which would spring new life and greater vigour in the development of art by the systematic training which their younger members could now obtain. The school was dependent entirely upon the way it was supported and made use of by those for whom it had been specially created.

EDINBURGH ARCHITECTURAL ASSOCIATION.—A meeting of the Edinburgh Architectural Association was held on the 1st. inst. in the Royal Institution, Mr. W. W. Robertson, President in the chair. Mr. John Burn read a paper on plumbing. In the discussion which followed, the value to be attached to the use of safety-valves on kitchen boilers came in for a good deal of notice. Most of the speakers advocated the use of the safety-valve, but one speaker declared that he was invariably opposed to its use. It was, he said, a trap which led people into trouble, by the valve getting stiff and unworkable. The proper safety-valve was to have the pipes properly protected, so that there would be no risk of their being frozen. Some of the blame of the freezing of pipes was attached by certain of the speakers to the practice of having the pipes conducted through the house in chaces which were mere ventilating shafts of cold air; but it was pointed out that a draught in the chace could be avoided by having the woodwork fitted close in to the pipes at each floor. There was a consensus of opinion that the cisterns should be so placed as to be accessible to the occupier of the house as to the plumber himself. Two or three of the practical plumbers remarked how much the introduction of drawn lead traps had occasioned the loss of practice among plumbers in the working of lead, and was consequently a bar to the education of the apprentice. At the close of the discussion the Association, on the motion of the Chairman, seconded by Mr. H. J. Blanc, A.R.S.A., adopted a resolution declaring that the Association recognised the efforts of plumbers to increase the efficiency of their trade by educational and other influences, and viewed with approval a system of registration such as that adopted by the Society for National Registration of Plumbers, and by the Scottish Society for the Registration of Plumbers.

GLASGOW ARCHITECTURAL ASSOCIATION.—The Glasgow Architectural Association met on the 7th inst., Mr. Wm. Tait Conner, A.R.I.B.A., Vice-President, in the chair, when Mr. David B. Dobson read a paper on "Decorated Gothic." The essay was illustrated by lime-light, and at the close Mr. Dobson received the customary vote of thanks.

ENGINEERING SOCIETIES.

SOCIETY OF ENGINEERS.—At a meeting of the Society of Engineers, held at the Westminster Palace Hotel, Westminster, on the 6th inst., Mr. Wm. George Peirce, President, in the chair, a paper was read by Mr. Charles Mason, A.M.Inst.C.E., Surveyor to the Vestry of St. Martin-in-the-Fields, Westminster, on "Street Subways for Large Towns." The author, impressing the importance of an improved method of underground construction for the reception of the numerous mains laid beneath the streets, stated that the subject was one requiring the immediate and serious consideration of all engineers to public authorities, gas, water, electric light, and other companies. Further, the difficulties experienced in making periodical examinations of the mains as to leakages and repairs (as the recent explosions in the metropolis prove) has imposed a duty upon those having the control of the streets to devise some better means whereby the safety of the public is absolutely secured, and the life and cleanliness of the pavements materially benefited. The present system of leaving disused pipes beneath the streets was strongly condemned, as materially adding to the risks to those using the streets by reason of probable accumulations of gas therein. The author, in explaining the construction and uses of existing subways both in the provinces and the Metropolis, pointed out the chief difficulties in the way of their general adoption as being the question of light and ventilation, and cost of construction; also, in his opinion, the "single" system was open to objection, as the mains having to be placed on one side of the subway, compel the supply-pipes to be taken across the same for supplying premises on the opposite side of the street, thus blocking the passage-way and causing obstructions in the flow of the pipes themselves; the difficulties of sewer ventilation were also referred to. The author proposed "triple" subways having a central avenue for trunk mains, and side avenues for subsidiary or service pipes, vaults being provided beneath the footways remaining the property of the Public Authority and leased to the adjoining owner, thus providing some return for the outlay. A detailed description of the method of construction was given, with an estimate of the cost showing a profit based mainly upon returns of the rentals derived from the vault construction and charges for those using the subway; the saving which would accrue in keeping the streets free from obstruction unfortunately could not be reduced to figures on the credit side, although the saving to life and rolling-stock would be very great; immunity from frozen pipes due to an uniform temperature in the subways was instanced as an argument in favour of subways. The author in conclusion strongly urged the desirability of obtaining powers whereby the whole of the subsoil of the streets should remain the property of the Authority, and although not directly advocating the municipalisation of all gas, water, and other companies, expressed the opinion that such a course from a municipal point of view would cause far less inconvenience than now arises to the public using the streets. Finally the subject was one of a very controversial nature, but in spite of all obstacles some form of the triple subway should be adopted universally in all large towns.

THE INSTITUTION OF JUNIOR ENGINEERS.—At a meeting of this Institution, held at the Westminster Palace Hotel, London, on the 3rd inst., the Chairman, Mr. H. J. Young, presiding, a Paper on "The Warming of Buildings by Hot Water" was read by Mr. Ernest King, Wh. Ex., and Mr. Kenneth Gray. The subject was treated in two divisions, the first dealing with the low-pressure system, and the other with that of the high-pressure. The authors having stated the theory of circulation and mode of determining the motive force in a hot-water apparatus, proceeded to deduce therefrom the best arrangement of the mains and pipes. The extent and size of piping to maintain suitable uniform temperatures in various buildings were then considered, and different forms of boilers reviewed, their particular advantages being fully discussed. It was shown to be often a matter of economy to employ a boiler somewhat larger than actually necessary. The several parts of the apparatus were described in detail, attention being called to the important improvement in hot-water engineering by the introduction of the ornamental radiator used for ventilating as well as for heating purposes. In referring to valves, those with full waterway were specially advocated. Passing on to the high-pressure system, its leading characteristics were brought forward, special mention being made of the pipe-joints, boiler-coil and pipes, and the various ways of circulation. The relative merits of the low and high pressure systems were investigated, from which it appeared that the former was more advantageous, being considerably cheaper, safer, more economical to work, and capable of readier and more effectual control. The paper was illustrated by a very large number of diagrams, specimens, &c., and an interesting discussion followed, in which Messrs. E. Berry, H. Parsons, Z. King, F.R.I.B.A., P. Griffiths, Loftus Perkins, W. B. Clarke, W. G. Walker, Shephard, A. S. Arundel, H. E. Duncan, and B. T. King took part.—A visit will be made, on the 18th inst., to the Imperial Institute, to inspect its heating system and other engineering features.

CIVIL AND MECHANICAL ENGINEERS' SOCIETY.—A paper was read before the Civil and Mechanical Engineers' Society, at its ordinary meeting on the 2nd inst., on "The Construction of Railway Bridges under 100 feet span," by Mr. Walter Beer, C.E. The author advocated the working out of a set of standard girders for spans starting from 15 ft. to the limit previously mentioned, advancing by increments of 5 ft., as he believed that the present weight of locomotives and rolling-stock had reached the extreme limit. He entered into the methods of calculating the strength of the various parts of girders; and drew attention to the necessity for care in the arrangement of the parts, so as not only to give ample strength to them, but to allow of their easy construction, and of accessibility to all the parts for the purpose of painting. The author also give examples and particulars of the cross girders as well as of the main, and pointed out the necessity of properly bedding the girders on their abutments, and the effect of placing the girders at an angle, with the plates on which they rested. A good discussion followed the paper, and among those who took part therein were the following:—Messrs. C. T. Walrond, A.M.I.C.E.; A. W. Ackermann, A.M.I.C.E.; E. H. G. Brewster, A.M.I.C.E., M.I.M.E.; W. Cooper Penn, A.M.I.M.E.; J. Nealor Cooper, H. Williams, John W. Kitchin, Harold Cooper, and A. F. Barnham.

THE LONDON CHURCHES OF THE GOTHIC REVIVAL.

THE following is a brief *résumé* of the long paper read by Mr. Thos. Fras. Bumpus on Monday, April 29, before the Toynbee Architectural Society.

Love for old pointed art (remarked the lecturer at the outset) never died out in England, and this is attested by the absurdities of Strawberry Hill

and several "Gothic" churches erected here and there in England during that era of Classicism, the eighteenth century: while the *Gentleman's Magazine*—about the only periodical of the time in which the arts were represented—did not a little towards keeping alive the flame of Gothic architecture, which for so long a period since its almost total extinction in the seventeenth century had feebly flickered. Towards this the writings of Milner, Carter, and Warton at the close of the last century greatly contributed, aided, when the present one was in its "teens" and "twenties," by the costly and magnificent productions of the elder Pugin, Britton, and Le Keux, Wild, Coney, Cotman, and Dawson Turner. But all these, remarked Mr. Bumpus, did but little toward the improvement of our church architecture, which was as bad as it could be.

Allusion was made to the large number of churches built in London between 1820 and 1830 under the Commissioners by the architects of the day—Barry, Savage and Vulliamy, Smirke, Bedford, and the Inwoods. In spite of poor and faulty detail, several of the Gothic churches built at this time had much dignity of outline: Mr. Bumpus singling out for special mention—the vaulted church of St. Luke, Chelsea, by Savage; and three at Islington, St. Paul, Holy Trinity, and St. John, by Barry.

In 1838-39, the Cambridge Camden and Oxford Architectural Societies were formed, and much practical good flowed from both these, as well as from the writings on architectural subjects of Brandon, Parker, Petit, Pugin, Rickman, Sharpe, and others. The London churches built between 1835 and 1845 were very poor; indeed, the lecturer remarked, a sort of pseudo-Romanesque—of a German type—threatened to become the religious architecture of England, with Blore and Railton for its chief exponents. Shaw's Byzantine Romanesque church of Christ Church, Watney-street, was cited as the most respectable of its class, indeed—the arrangement of the nave elevation was remarkably good; while Scole's church of St. John, Duncan-terrace, Islington, deserved a visit on account of Armitage's fine frescoes.

Hakewill, Ferrey, Cundy, Poynter, and Salvin built a good many churches during the early "forties," but none approached Scott's St. Giles', Camberwell, in point of architectural completeness and purity of detail. During this period—*i.e.* 1845 to 1855—the majority of the London churches were copies of ancient examples, Mr. Bumpus instancing, and in some cases briefly describing—St. Andrew, Wellstreet; St. John, South Hackney; St. Matthew, City-road; St. Barnabas, Pimlico; St. Stephen, Westminster, and The Holy Trinity, Bessboro' Gardens. St. Mary Magdalene, Munster-square, was cited as a typical modern town church, in which the clearstory is absent. Butterfield, Carpenter, Pearson, Street, were all now ris into note, and Brandon had built, in imitatio n a Yorkshire abbey, the fine apostolic churc n of Gordon-square. h in

As examples of churches built in London under the second or inventive phase of the movement Mr. Bumpus instanced the stately and abnormal one built by Mr. Butterfield—St. Matthias, Stoke Newington; All Saints', Margaret-street; St. Alban's, Holborn; and St. Augustine, Queen's Gate. Mr. Bumpus descanted enthusiastically upon the severe gabled tower of St. Matthias; upon the imposing spaciousness of St. Alban's and St. Augustine, Queen's Gate, whose quadrangular belfry was suggestive of one of those near Toulouse; and upon the gorgeousness of All Saints'. The difference in feeling between the frescoes by Dyce at All Saints', and those on water-glass at St. Alban's, by Le Strange and Preedy, was pointed out, the lecturer remarking that a very happy medium was struck between the naturalism of the former and the archaism of the latter by Mr. Holiday's work on the chancel wall of All Saints', Notting Hill, a noble building by Mr. White.

The introduction of a foreign element into our ecclesiastical architecture about 1855 was due, Mr. Bumpus opined, to the writings of Ruskin, the Lille competition, and to the increased facilities for foreign travel.

Scott's Churches of St. Mary, Stoke Newington, and St. Andrew, Westminster; Street's St. James Less, Upper Garden-street; and St. Peter's, Vauxhall, by Mr. Pearson, were dwelt upon as remarkable instances of how our church architecture was for a time influenced by foreign forms. As town churches Mr. Bumpus thought no finer modern specimens existed than those built between 1865 and 1870 in Shoreditch, Haggerston, and Hoxton by Mr. James Brooks. In all these a foreign tinge was discernible. Burges' St. Faith, Stoke Newington, was much praised. It was gratifying, resumed the lecturer, to remark that many of the architects who had shown a preference for foreign detail had within the last twenty years returned to more strictly English forms. Mr. Pearson's churches, in which the sublime in architecture had been reached—St. Augustine, Kilburn, St. John, Holborn, St. Michael, Croydon, and St. John, Norwood—were striking examples of this, in the purest Early English. Similar to these was St. Philip, Stepney, due to the late lamented Mr. Cawston. Street's St. John Divine, Kennington, and Scott's parish church of Kensington were fine Early Middle Pointed types of revived Gothic; while in St. Agnes, Kennington, St. Michael, Camden Town, St. Mary of Eton, at Hackney, and St. Barnabas, Dulwich, the Late Decorated and Perpendicular styles had been most ably resuscitated at the hands of Messrs. G. G. Scott, jun., Bodley & Garner, and Leeson & Oliver.

Much interest was centred in a fine collection of photographs of English, French, and German cathedrals and churches, Wild's fine series of French cathedrals, belonging to the lecturer, and other suitable items of interest.

TRADE CIRCULARS.

MESSRS. WYLIE & LOCHHEAD send us a book of designs for stencilled friezes and fittings, by Mr. Arthur Gwatkin. The quality of Mr. Gwatkin's design will be known to our readers by the work which he has exhibited at the Royal Academy, and which has been illustrated in our lithograph plates from time to time. The designs in this book present the same general characteristics; a bold and free flow of line with a sufficient conventionalism in the treatment of motives derived from natural foliage. The "Seaweed Frieze" and the "Cactus Frieze" are both exceedingly good; the "Genoa Frieze," a very bold treatment of floral forms in crimson tones, with open spaces of white ground between the scrolls, is still better. We can recommend these designs to the attention of architects.——Chatwood's Safe and Lock Company send us a new catalogue of their safes. They draw particular attention to their new method of construction of "solid" steel safes, in which the top, bottom, and sides are all bent solid out of a single steel plate; the edges at the back are also bent in solid to form flanges to take the back plate, which is fixed from within the safe, before the doors are fixed, and rivetted to the flanges with steel rivets clenched by hydraulic rivetters. Exterior angle junctions are thus entirely got rid of.——Messrs. John Birch & Co. send us their illustrated catalogue of moulded bricks, brick and tile stamps, and brick-making machines. Among the latter is one (No. 4) introduced to supply a cheap brick-moulding machine for plastic and other clays. It comprises a mixer, pug mill, and circular rotary moulding-table, and being strongly mounted on a cast-iron base-plate, requires little foundation. It is offered as specially useful to contractors, and is capable of producing 10,000 bricks per day of ten hours.——The "Universal Sewage and Water Purification Co." issue a circular illustrating their method of screening and precipitating sewage, which is passed into a circular precipitating-chamber at a tangent to the outer wall, and is supposed to eddy round and come into contact with baffle-plates, which break up the solids; the sewage then escapes by gravitation into the chemical-tank and thence into the precipitating-tank. We should feel some doubt as to the mere impinging of the circular current of sewage against the baffle-plates doing all that is expected in the way of breaking up the solids; otherwise, the system seems calculated to work itself out all right.——Mr. G. Straus sends us two catalogues of apparatus and accessories for telegraphs, telephones, and lightning conductors, which contain illustrations of every kind of electric apparatus for house-furnishing, and serve to remind one to how many uses electricity is or may now be put for things of every-day use, including such things as bath-room electric pulls, pulls for signalling the opening of doors and windows, microphone table-stations, &c. The strong-sounding outdoor bell, placed on a bracket from the wall and with the battery covered in the top of the bell, is arranged with a double clapper so as to give a very powerful ring with a very small battery, which is protected from the weather by the bell itself acting as a cover to it.——Messrs. Farrar & Co., casement-makers and art-metal workers, send their catalogue showing a great many sections of metal casements, both for inward and outward opening; also they show a double casement without a centre mullion, the two leaves meeting against each other. It is a great advantage, no doubt, to get rid of the centre mullion when the sashes are opened, but we should have liked to have seen the section of the meeting bars of the double casements, which does not appear to be shown.——Messrs. F. W. Potter & Co. send us a specimen of their "steelead" stair-tread, which appears to consist of a lead sheet with cross steel wires imbedded in it, with a mesh of about ¼ of an inch square. We have had no means of testing its efficacy, but it appears as if it ought to make a good material for a tread.——Messrs. Debenham & Freebody send an illustrated catalogue of antique furniture, mostly English eighteenth century, at present on sale at their rooms. The illustrations show some interesting examples.——Messrs. Baird Thompson & Co. send us a large and fully-illustrated catalogue of their various heating and ventilating appliances, of which the most special are water-spray methods of inducing ventilation, and the invisible automatic roof ventilator; the catalogue also includes various inner ventilators of the usual kind, besides heating apparatus, fans, motors, &c.

Correspondence.

To the Editor of THE BUILDER.

THE RECENT SALE OF BLOCKS.

SIR,—Adverting to Mr. Bewick Ward's letter (p. 336 *ante*), I beg to say I wrote the "Note" (p. 310 *ante*) knowing the scope of the sale, which did not cover all the blocks cut by the Bewicks. They were the "pot-boilers," in that word's higher sense, as they laboured for their living. In view of previous sales of the Jupp and Hugo collections, for instance, with those by Jane Bewick and after her death, the term "the 'Bewick blocks'" has not the exclusive meaning your correspondent seeks to give it, in depreciation of the excellence of Mr. E. Pearson's Bewick collection. Moreover, what he calls "the few blocks engraved by the Bewicks and sold last week" far exceeded in number those owned by Mr. Bewick Ward's family.

THE WRITER OF THE "NOTE" ON THE BEWICK BLOCKS.

The Student's Column.

BRICKS AND TERRA-COTTA.—XIX.

STRENGTH (*continued*).

VERY little is known concerning the transverse strength of bricks. The most complete account with which we are acquainted was given* in our columns many years ago, to which the student is referred. In summarising the results arrived at, we note that on comparing the strength of thin bricks and tiles (all those the thickness of which does not exceed 2¼ in.) with the strength of the thicker bricks, that the former much exceeded the latter. For instance, in the thirty-five kinds of the thicker bricks tested, the average of the strongest was 2,855 lbs., the average of the mean strength 2,125 lbs., and that of the least strength 1,557 lbs., the thickness varying from 3·25 in. to 1·7 in.; whilst from nine thinner kinds of bricks, none of them exceeding 2·25 in. in thickness, the results obtained were 4,088 lbs., 2,954 lbs., and 2,070 lbs. as the greatest mean and least strengths, giving an excess of strength, over the average of the whole, of 1,233 lbs., 829 lbs., and 513 lbs. These experiments were made on the assumption that if the transverse strength of the bricks was known, and if the mortar, after being allowed to set thoroughly, could be taken to be the same strength as the bricks, a calculation could be satisfactorily made as to the sustaining power of brick beams or lintels.

From what we now know, however, it would be rash to assert that the transverse strength of a brick is such an important factor in estimating its use in the connexion indicated. The weakness lies in the material with which the bricks are cemented together. It is true that in the experiments by Mr. Barlow on the transverse strength of brick pillars tested horizontally, the fracture was not through the joints, but through the solid bricks, but that must be regarded as the exception rather than the rule. It seems to be forgotten that although the bricks may be strong,

* The *Builder*, 1861, p. 50.

and the cement strong also—stronger than the bricks if need be—that there yet remains an important item for consideration, viz., the power of adhesion (in the broad sense) between the bricks and cement, in practice. Very strong bricks are frequently but little absorbent, although no rule can be laid down as to that; their surfaces may be fairly smooth, and not present sufficient unevenness to permit the cement or mortar to adhere or to interpenetrate, with any degree of firmness. So it is, that with the use of the most durable brick and the best cement, or mortar, we may not be able to construct the strongest wall; in fact, with a comparatively soft brick, but with very good mortar, a stronger structure could be erected.

Some observers have remarked, that in order to induce bricks to "take" the mortar, there should be a coating of rough sand on the outside of the less absorbent kinds, *i.e.* the moulding sand should be left to be fused to the brick in burning. We do not say that this could not be done in some instances, but there would always be a suspicion attaching to this process that the brick was not properly burned. Of course, we are alluding now to the more vitrified and hard-faced bricks. If these are to be thoroughly burned, the moulding sand would have to submit to fusion, or agglutination, as much as any other ingredient in the brick, when it would inevitably succumb to the process. Partially burned bricks and those not "hard burned" are in general porous enough to take the cement.

The value of tests of the transverse strength of bricks, therefore, is not of much use in theoretically estimating the strength of brick beams and the like; but it is, in a measure, an index of the general quality of individual kinds of bricks. If a good average transverse strength is attained, the brick is either made of good materials; or, if of bad materials, the burning has been good.

Strength of Brickwork.

So little is known concerning the strength of brickwork as deduced from actual experiment, that any information on the matter possesses considerable interest. The strength in all cases, bearing in mind what we have already remarked, is largely dependent on the nature of the cementing material, and no account is perfect unless both this and the bricks concerned are separately tested, and their degree of adhesion ascertained prior to their being built into the experimental block, pillar, or short wall to be subjected to stress. Further, all materials used in its construction should be minutely described; and the time allowed to elapse between the erection and the date of testing clearly stated. These important factors are often neglected.

The resistance of brickwork in cement to crushing power is generally stated at ·232 tons per square inch, but that is a low figure, as we shall see. In estimating this the strength of a stock brick has been placed at 1·044 ton, and Staffordshire blue at 3·100 tons; the student is requested to compare these figures with those given in our last article. The weight of bricks is permitted to stand at something like 100 lbs. per cubic foot on the average; so that a column 1 in. square will thus weigh ·7 lb. From this it may be said that a brick column might be erected to the height of 740 ft. of ordinary bricks, and much higher of better class material, without danger of crushing.

In the year 1887 Sir Arthur Blomfield had some experiments on the strength of composite columns of brick and cement carried out for him. Rough-cut Leicester bricks frogged on both sides were used for the purpose, and the average strength of each as ascertained by tests on six of them, was 150·6 tons per square foot, or 2,342 lbs. per square inch. The concrete used was composed of 3 parts gravel to 1 part of cement, and was made about four months before being submitted to the test; the results on four 12-in. cubes showed a tolerably uniform crushing weight of 121·5 tons per square foot, or 1,890 lbs. per square inch. These two materials—the rough-cut Leicester bricks and the concrete—were then put together as follows: Shafts, 3 ft. in length and 2 ft. in diameter, were constructed of the bricks, and the core was filled with the concrete. After being made four months, it was ascertained that they were capable of resisting the greatest pressure that the machine used could be brought to bear upon them, without being crushed. The only apparent injury was to the outer casing of bricks, and these latter being frogged, no doubt facilitated their partial destruction. The figures relating to tests carried out on two of these composite columns were:—

Approximate area of concrete = 176 square in.
" " " brickwork = 276 "

Brick and concrete column, 12 courses, 36 in. high, 24 in. diameter, 452 square in. area.

1. Results on 1st column: cracked slightly with 505,000 lbs. = 225·4 tons; cracked generally, 626,560 lbs. = 279·7 tons. Per square inch of area, 1,386 lbs.

2. Results on 2nd column: Cracked slightly with 522,000 lbs. = 233·0 tons; cracked generally 635,000 lbs. = 283·5 tons. Per square inch of area, 1,404 lbs.

It was unfortunate that the experiments could not be conducted to the crushing point, but there is sufficient evidence that piers made in the manner described, even with frogged bricks and under rather adverse circumstances, were capable of sustaining practically any weight that might be brought on them in practice. No doubt, if the piers had been permitted to stand a longer time than four months, seeing that Portland cement concrete continues to increase in strength beyond that time, the figures would have been still higher.

The following results as to the strength of brick piers were published in our columns many years ago.* Two brick piers, each 9 in. square on plan, and 2 ft. 3 in. high, were constructed of good, sound, Cowley stocks, set in cement of good quality. One pier was built with the bricks laid flat, and the other with them on edge. Two days after being made they were tested, when it was shown that the pier having the bricks laid flat compressed ¼ in., then cracked under a weight of 25 tons, and broke to pieces with a weight of 30 tons. The other pier, with the bricks on edge, did not exhibit any signs of compression, cracked with a weight of 30 tons, and broke to pieces with 35 tons.

Experiments as to the strength of bricks and brickwork made of them were conducted in 1882 by Sig. G. Curioni.† The size of the hand-made bricks used averaged 9·055 in. × 4·331 in. × 2·204 in.; that of the machine-made bricks of the first pattern alluded to in the following table, 9·567 in. × 3·543 in. × 2·165 in., and that of the second pattern 9·055 in. × 4·331 in. × 1·89 in. All the bricks employed were made of the same kind of clay, and under similar conditions. The mortar used was composed of equal parts of Casale Monferrato cement and fine sand from the river Po, and it was allowed five days to set before being subjected to the tests.

Strength of Italian Bricks and Brickwork.

Description.		Breaking Strain in Lbs. per Sq. In.			
		Hand-made Bricks.	Machine-made Bricks. First Pattern.	Machine-made Bricks. Second Pattern.	Machine-made Bricks on edge.
1. Single bricks placed between two pieces of sheet lead	Max.	1,920	3,385	2,261	—
	Min.	1,749	3,300	2,176	—
2. Single bricks with faces brought to an even surface with mortar	Max.	3,740	4,523	3,456	2,503
	Min.	3,627	4,181	3,072	2,062
3. Pillars of two bricks placed one above the other, faces brought to an even surface, and jointed with mortar	Max.	2,389	2,517	2,318	—
	Min.	2,034	2,190	2,148	—
4. Pillars similar to above, but of three bricks	Max.	1,436	2,104	—	—
	Min.	1,294	1,835	—	—
5. Pillars similar to above, but of four bricks	Max.	—	1,878	—	—
	Min.	—	1,678	—	—
6. Pillars of three rows of bricks with joints normal to the compressed surfaces. Latter brought to an even surface in each case, and jointed with mortar	Max.	1,252	—	—	—
	Min.	1,138	—	—	—

The bricks referred to in the accompanying table were placed flat, except in part of the second series of experiments, as shown, when some machine-made bricks were tested on edge.

Summarising Professor Unwin's account ‡ of the researches of the well-known Berlin experimenter, Dr. Böhme, it may be noted that in these tests brick cubes, with different kinds of mortar, were used. They were approximately 10 × 10 × 9·5 in., and were three months old. Two kinds of brick were used; namely, Beneckendorfer and Hertzfelder. The former had a crushing strength of 263·2 tons per square ft., and the latter 160·9 tons. The strength of the mortar used varied a great deal following the kind. In the end, the ratios of strength of brickwork to the strength of the single bricks were found to be as follows:—

For mortar of 1 lime, 2 sand ..... 0·44
" " " 7 lime, 1 cement, 16 sand 0·48
" " " 1 cement, 6 sand ..... 0·55
" " " 1 cement, 3 sand ..... 0·63

In certain cases it would appear that the diminution of strength in comparative blocks of brickwork is due to the different shapes of the bricks used, or to the shape of the blocks tested, and not altogether to the influence of the mortar joints.

Experiments on a larger scale than the foregoing are expensive, so we need not be surprised that so few have been made. The results afforded by experimental brick beams in the years 1837 and 1851, although not referring to modern bricks, may therefore be quoted as of general interest, and in the absence of better data. The beam built in the former year at Vauxhall consisted of hard stock bricks, bonded in the usual way, and bedded and grouted with a mixture in equal proportions of the best Roman cement and clean Thames sand; it was completely solid throughout. It had 19 courses of bricks, the 13 uppermost courses being two bricks, or 18 in. in thickness, and the 6 lower courses 2½ bricks, or 1 ft. 10½ in. in thickness. The sectional area was, therefore, 13 courses, at 3 in. each = 39 in. × 18 in. thickness = 702 in.; 6 courses at 3 in. each = 18 in. × 22½ in. thickness = 405 in.; total sectional area, 1,107 superficial inches. In the lower courses were inserted fifteen lengths of flattened hoop-iron 1½ in. and $\frac{1}{16}$ in.* The beam was supported at each end, leaving a clear bearing of 21 ft. 4 in., and after it had been built about three months it was loaded with 11,200 lbs. of pig-iron placed on a platform which was suspended from the central part of the beam, which weight was increased at the end of another three months to 24,000 lbs. It was then left for one year, when it was broken down by increasing the weight to 50,622 lbs.

With this example in front of them, certain exhibitors at the Great Exhibition of 1851 determined to carry out some experiments on the same lines. Although made to test the strength and other properties of Roman cement, the 1837 brick beam was, of course, indirectly a test on brickwork set in cement and strengthened by iron. It is to be regretted that the results should have been marred by the insertion of the hoop-iron. Nevertheless, the exhibitors alluded to in 1851 built a beam of a similar kind, only with Portland cement and hollow bricks. Another point of difference was that the bricks were all laid as stretchers. With the joints and beds the whole measured in the six upper courses, an average of 36 in. × 17·25 in. = 621 in.; and in the three lower courses an average of 16·5 in. × 26·6 in. = 439 in.; making a total area of 1,060 in. If from this we deduct the forty vacuities (in the hollow bricks) of 9 in. each = 360 in., we have as the net sectional area, 700 in. Iron was used as in the other experiment. After having been erected five months, the beam was loaded, as before, with pig-iron. With 41,600 lbs. two cracks were developed in the four lower courses, at a short distance right and left of the centre of the beam. With 62,800 lbs., which it bore for a short time, the beam gradually separated into two parts as nearly equal as possible, the line of fracture being vertical and indiscriminately through bricks and joints as they occurred.

In regarding the relative strength of these two beams, besides the points already mentioned, we should take into account the differences in sectional area; in the method of building up the bricks in each; and the greater age of the first-mentioned beam before it was finally broken down.

In order to ascertain the influence of flattened iron when built as mentioned above, Sir Charles

* The *Builder*, 1848, p. 177.

† *L'Ingegneria Civile*, Dec., 1882, p. 177; and abstract in *Min. Proc. Inst. C.E.*, vol. lxxiii. (1883), p. 385.

‡ "The Testing of Materials of Construction," 1888, p. 439.

* General Pasley, in his work "On Limes," p. 162, mentions five only.

Pasley constructed two brick beams, the bricks being set in cement and precisely similar in every respect except that one of them had five pieces of hoop-iron bond and the other none. The latter cracked when the centreing was removed, and was broken by a weight of 498 lbs.; whilst the former sustained a weight of 4,523 lbs. before yielding. These experiments are not conclusive, however, and the circumstance that such a short beam (without the pieces of iron) cracked directly it was set free, by its own weight, suggests that it was not well or properly built.

GENERAL BUILDING NEWS.

BANK, HALIFAX.—The new bank of the Halifax and Huddersfield Union Banking Company at Briggate has just been completed. The contract for the erection and all the work connected therewith (with the exception of supplying and fixing office fittings) was let to Messrs. W. Radcliffe & Co., Huddersfield. The building is 37 ft. in height from the ground floor to the outer glass roof, and the main room inside as far as the inner glass roof is 27 ft. 9 in. high. The carving work of the façade has been executed by Messrs. Stocks & Horsman, of London. Mr. Johnson, of Southport, was the architect.

CHURCH, IPSWICH.—The foundation-stone of the new Church of St. Bartholomew, Ipswich, has just been laid. The site of the church is at the angle of Rose Hill and Newton-roads. The edifice when completed will consist of a nave, 100 ft. long, north and south aisles, chancel, tower on the north side, morning chapel, and sacristy. It will provide sitting accommodation for 820, and the total cost will be about 9,000*l*. The full dimensions will be 162 ft. long over all and 60 ft. wide, while the tower will be 80 ft. high, with a spirette. The contracts for the present part of the building amount to 4,130*l*., and the remainder will cost slightly more, on account of the inclusion of the tower. Red brick, with Bath stone dressings, will be used; a steep roof will be of red tile, but there will be no clearstory. When completed, the church will be mainly lighted by a large west window. Inside there will be an open-timbered roof. The present works will be confined to the chancel and about half the nave, and the foundations of the tower will be laid, but its erection, as well as that of the sacristy, morning chapel, and rest of the nave will be left to a future day. Sitting accommodation for about 500 will be now provided. Mr. Chas. Spooner, of Westminster, is the architect, and Mr. S. C. Parmenter, builder, Braintree, has secured the contract.

INFIRMARY BUILDINGS, BRIDGNORTH. — The foundation-stone of the new Infirmary for Bridgnorth and South Shropshire has just been laid. The structure, which is from the plans of Mr. E. C. H. Maidman, architect, of Edinburgh, is divided up into departments, each being kept separate. The administrative portion faces the roadway, has an easterly aspect, and occupies a central position, while the out-patients' department is placed to the south, the kitchen, &c., to the north, and the wards to the west, being connected by a cross ventilated corridor. The hospital is designed to accommodate all the patients on the ground floor, and provision is made for eighteen beds, viz., eight in the male ward, eight in the female ward, and two in the spare ward. Externally the building will be faced with red bricks and tile hanging, and the roofs will be covered with Broseley tiles. The contractor for the work is Mr. Merton Hughes, builder, of Birmingham.

SIR ANDREW JUDD'S COMMERCIAL SCHOOL, TONBRIDGE.—The foundation-stone of the new buildings in connexion with this school has just been laid in Brook-street-lane, Tonbridge. Mr. Campbell Jones is the architect.

BOARD SCHOOL, HARROGATE.—On the 2nd inst., Councillor Morrison, C.C., Chairman of the Harrogate School Board, laid the memorial-stone of what is to be called the Western Board School, in Cold Bath-road, Harrogate. The school is to be erected from designs by Mr. T. E. Marshall, of Harrogate, in the Renaissance style, freely treated, the main pile being arranged on the Central Hall plan, with surrounding class-rooms, divided by glazed screens, &c. There will be provision for 305 infants and 620 mixed scholars; a separate building for manual instruction and cookery; playgrounds, play-sheds, and all necessary out-offices. The buildings will be constructed of Killinghall stone, and have fireproof floors. They will be heated by the hot-water low-pressure system.

RESTORATION OF SHREWSBURY CHURCH.—During a gale in February last year, about 50 ft. of the spire of St. Mary's Church, Shrewsbury, was blown down, and the masonry crashing down upon the nave from a height of 170 ft. did other damage. The cause of the disaster, it is stated by Mr. J. Oldrid Scott, the consulting architect, was undoubtedly that the spire happened to be under repair and surrounded at the top with scaffolding at the moment when the storm occurred, exerting a leverage on the tall structure which the stonework was not strong enough to withstand. It gave way at the point where the new masonry, erected some forty or fifty years since, commenced. The fall of the spire took place in a direction due east from the tower, and to this fact is to be attributed the escape of the arcades of the nave, but the south clearstory was so seriously dislocated by the outward pressure of the roof, as it was crushed down by the falling masonry, that it has been necessary to rebuild it. The north clearstory also required considerable restoration. The roof of the nave, which was nearly destroyed, was so seriously decayed that many years since an outer roof was erected over it, from which it was suspended. The parapets were at that time raised some 3 ft. to suit this upper roof, the old design being lost and the appearance of the church greatly injured. When the stonework of the spire fell, the whole of the double roof was brought to the ground with the exception of the bays at the extreme east and west ends. These escaped and are still in position. The power of the wind was shown by the escape of the western bay, as the stonework which fell must have been carried bodily at least 25 ft. towards the east. The timbers, in falling, were broken so seriously that, in many cases it was impossible to reinstate them, and new beams were necessary. Much of the beautiful carving escaped, many of the finest bosses and other parts being quite fit to be used again, and served as models for the new work. Every endeavour has been made to preserve as much as possible of the ancient features, so that the roof is now essentially the one which the church has had since the fifteenth century, and is not a new erection. The outside of the roof has been brought back to its original form and pitch, and is covered with lead. The parapets have been restored to their proper height, and the ancient design has been followed as far as it could be ascertained. The roof-timbers, which for years had been disfigured and obscured by a coating of dark paint, have been cleaned so that the oak may be seen once more with its natural colour. The contract for the restoration of the spire had been largely carried out at the time of the accident; Mr. Blackburn being the contractor, and Mr. J. Lloyd Oswell the architect. But little, therefore, had to be provided for beyond the erection of that portion of the spire which fell. The whole of the masonry has been set in cement, and all the stones dowelled together. The upper part of the spire is further strengthened by a long bar of copper 2 in. thick passing through all the upper courses. The main defect in the tower was at the south-west angle, where the weight of the upper part being concentrated in the extreme outer surface, split off the ancient Norman facing and left the internal rubble-work exposed. These repairs were of an urgent nature, and were put in hand at once. The four pinnacles of the tower have been re-set, and the angle buttresses in the belfry stage restored, and other necessary repairs carried out. The contractor for the restoration of the nave and tower was Mr. Bowdler, of Shrewsbury.

SCHOOL, BRUNTSFIELD, EDINBURGH.—This new public school has just been completed. The entire ground devoted to the school buildings and playgrounds extends to fully one acre. The school is three stories in height. The infant department is placed on the ground-floor; the juvenile department on the upper floors. There are two large halls in the centre of the school, one on the ground-floor, round which are grouped eight class-rooms for infants. The other hall is on the first floor, and opening off it are ten class-rooms for juveniles. On the second or upper floor there are six class-rooms, making in all twenty-four class-rooms, varying in size from the one holding forty-eight pupils to that holding 125 pupils. Besides the ordinary class-rooms there are provided a swimming-bath, gymnasium, and workshop. The accommodation of the school is 1,726, exclusive of the cookery class-room, the science room, the swimming-bath, the gymnasium, and the workshop. If the accommodation provided by these extra rooms be added to the regular class-room accommodation it gives a total of 2,253 pupils. The entire building is heated by steam-pipes, and is ventilated by mechanical means. A Blackman air-propeller, driven by a steam-engine, extracts the vitiated air from the various class-rooms. The school, designed by Mr. Robert Wilson, the Board's architect, is in style an adaptation of French Renaissance. The front elevation, about 158 ft. in length, is relieved at each end by two projecting gables. In the upper part of these gables are semi-circular panels, on which are carved the Scottish arms and the city arms. In the lower part of these gables are pieces of sculpture, the one representing elementary education, and the other technical education. From the centre of the roof there rises an ornamental flêche, in which is hung the large bell. The total cost of the school buildings is expected to be 27,300*l*. The contractors for the different works were Messrs. Kinnear, Moodie, & Co., and the heating and ventilation have been carried out by Messrs. Mackenzie & Moncur.

SCHOOL, DOVEHILL, GLASGOW.—The members of the School Board of Glasgow met on the 26th ult. in Dovehill School for the purpose of opening an addition which has been made to the existing buildings. The addition forms practically an annexe to the south of the existing building, with which it accords in style. The class-rooms are separated from the old rooms by a staircase and teachers' rooms. The accommodation provided is—On the first floor, two class-rooms, measuring respectively 26 ft. 6 in. by 26 ft. 3 in., and 22 ft. 6 in. by 33 ft. 6 in., giving places for 140 scholars. On the ground floor there are rooms for cookery, laundry, and washing. On the basement floor there is a workshop furnished with benches. The new portion is provided with a separate entrance and staircase. The cost of the building is about 3,280*l*. The work has been executed under the superintendence and from plans prepared by Messrs. John Honeyman & Keppie, architects, Glasgow. Mr. David Johnstone acted as clerk of works.

PARISH ROOM, ST. MARY REDCLIFF, BRISTOL.—Additions to the Parish Room at St. Mary Redcliff, Bristol, have just been made. The work of building a series of rooms was divided into three sections. It was commenced in 1890, when, upon a site taken from the large garden in front of the vicarage, a parish hall, designed to accommodate 500 people, was erected at a cost of about 1,900*l*. Shortly afterwards a large soup-kitchen and other offices, which cost 250*l*., were built. Now the structure has been completed by the provision of three large class-rooms, and an additional entrance from Guinea-street, finishing the frontage upon that thoroughfare, and these completion works have been carried out at a further cost of 1,000*l*. The architect for the building was Mr. H. C. M. Hirst, and the style is Late Gothic. The walls are of brick, with freestone dressings; the windows filled in with cathedral glass; and the general front of an ornamental character, with an oriel window enriched by carving.

SUNDAY SCHOOL BUILDINGS, SOHO, BIRMINGHAM.—The Countess of Warwick, on the 4th inst., laid the foundation-stone of the new Sunday-school and parish-room in course of erection in connexion with St. Chrysostum's Church, Soho, Birmingham. The new building, which will stand by the side of the church in Whisgrave-road, will be composed of red brick and terra-cotta, and will afford accommodation for upwards of 700 children. Mr. Oliver Floyd is the architect of the new building.

NEW CHILDREN'S HOME AT CARDIFF.—On Saturday last Lord Tredegar opened the new Children's Home at Roath, Cardiff, which has just been completed for the St. Margaret's Sisterhood, East Grinstead. The new buildings stand on a site half-an-acre in extent, adjoining St. Margaret's House of Mercy, the freehold of which has been given by Lord Tredegar. The design is plain and unpretentious in a modern domestic style, Gothic in feeling, architectural effect being obtained by the admixture of Bath stone and Ruabon red pressed brick dressings and bands with moulded brick strings and cornices, and Maes-y-cymmer stone shoddies for the facings. A sculptured figure in Portland stone representing St. Margaret, by Mr. Wormleighton, of Cardiff, is placed in a niche in the front elevation, and the same artist has executed the bold incised work in the cement panels of the half-timbered centre gable. Accommodation is provided for thirty children. On the ground floor are provided spacious entrance-hall, with waiting-room, sitting-room, work- and play-rooms, and refectory, with store-room, kitchen, scullery, larder, and the usual offices. There is a small laundry attached, consisting of wash-house and ironing-room, both spacious, airy, and well ventilated. A side-entrance is provided for the children, with lavatory and cloak-room attached; and there is also a separate entrance to the laundry, and a covered-way connecting the home with the private chapel connected with the House of Mercy. On the first floor are two large dormitories, with attendant's bedroom between; guest-chamber; bath-room, and small infirmary, which can be isolated in case of necessity. On the second floor are two large dormitories for the elder girls, on the cubicle system, each cubicle having a separate window, and through ventilation is obtained by windows reaching to the ceiling at either end. There is a bedroom for the Sister in charge and also a bath-room, linen-closet, and store-room on this floor. The buildings have been carried out at a cost of about 2,300*l*., by Messrs. Shepton & Son, of Cardiff, from designs and under the personal superintendence of the architects, Messrs. Veall & Sant. Mr. Wm. Beese was contractor's foreman. The tiles for floors were supplied by Woolliscrofts, Hanley; the grates by John Williams & Sons, Cardiff; the tile hearths by Godwin, Lugwardine, and the lead lights by Mr. S. Evans, West Smethwick.

PEARN CONVALESCENT HOME, MANNAMEAD, PLYMOUTH.—On the 6th inst., Mrs. Edward St. Aubyn opened the Pearn Convalescent Home, which is situated in the grounds of Compton Leigh, Mannamead, Plymouth. The building of the Convalescent Home was commenced in the summer of 1893, and provides accommodation for thirty patients at one time, a lady superintendent, housesteward, and staff of domestic servants. The new Home, which stands close to the house, is designed in a style of architecture to harmonise with the latter. The building has a frontage of 186 ft., divided into three blocks by two towers, in which are placed the principal entrances. The towers are crowned by copper domes. Ornamental cast-iron verandas, with glazed roofs are placed in front of the men and women's blocks, and a tiled terrace is carried along the whole of the front of the building. In the central or administrative block is the patients' dining-room, common to both sexes, having a floor area of 750 square ft. On each side of the dining-room is a store-room for table-linen and general household stores. The kitchen, having an area of 360 sq. ft.,

is directly behind the dining-room, and has two serving lobbies with buttery hatches opening into the dining-room. At the rear of the kitchen are the scullery, larder, pantries, store-rooms, &c., and in the basement in the same wing are the boiler for the hot-water supply and general coal-stores. In the central block, in addition to the dining-room and stores, are the matron's office and dining-room and the steward's office and telephone room, the two inner halls and principal staircases. The patients' day sitting-rooms, each having an area of 600 sq. ft., are at the east and west ends of the men and women's blocks, and between these rooms and the entrance corridors are the matron's sitting-room on the women's side and the steward's room on the men's side. The lavatories, bath-rooms, and offices are placed in separate wings to each block on both ground and chamber floors. These, together with the entrance lobbies, vestibules, and corridors on the ground floor, have tiled floors and dadoes. The dormitories on the first floor consist of rooms respectively for five, four, and three sets of patients, the matron's and steward's bedrooms being placed in the towers. Store-rooms, warmed by hot-water coils, for bed linen and blankets, and large cupboards are provided on the landings. The servants' bedrooms and sewing-room are over the kitchen department. The floors of all the living rooms, dormitories, halls, and landings are of oak, and the two principal staircases are constructed of teak throughout. Shorland's patent fireplaces and hall-stoves are fixed in the ground floor rooms. The dormitories are provided with extraction ventilators in the ceilings, which are connected with Boyle's ventilators in the turrets. The drains are laid with Doulton's patent pipes, having self-adjusting joints. Mr. Samuel Roberts, of Mount Plym, has carried out the general contract for the Home, and Messrs. W. Rowe & Son have executed the plumbers' work, including water, gas, and sanitary fittings. The House, Compton Leigh, has been renovated in order to fit it for a Home of Rest for Nurses, the whole of the exterior walls having been recemented, and all decayed portions of the external woodwork renewed. Mr. Samuel Roberts has carried out the works in gardener's cottage, lodge, and in recementing the exterior of the house, and Mr. Brimacombe the plumbing and sanitary arrangements. The drainage of Compton Leigh, alterations for laundry, mason and bricklayers' work for new glass houses, general jobbing work and reforming ground in front of the house have been carried out by Mr. George Hosking, Compton Gifford. The new vinery, peach-houses, plant-house, and conservatory, with heating apparatus for the house and drying closet in laundry have been supplied and erected by Messenger & Co., of Loughborough. The painting and decoration of Compton Leigh have been executed by Mr. Richard Coke. The tiled floors, dadoes, and terraces, both at the Home and Compton Leigh, have been supplied and laid by Minton, Hollins, & Co., of Stoke-upon-Trent. The clerk of works was Mr. W. Crimp, of Mannamead. The architects for the works were Messrs. King & Lister, of Plymouth.

PREMISES, EDINBURGH.—New premises have just been erected at Edinburgh for Messrs. Jenner on the site of the buildings destroyed by fire in November, 1892. Mr. Hamilton Beattie was the architect.

FOREIGN AND COLONIAL.

FRANCE.—At its last meeting the Académie des Inscriptions et Belles Lettres has, at the request of the Société Centrale des Architectes selected M. Chamonard, a former student of the French school at Athens, in recognition of his remarkable works on Delos, as the recipient of the Grand Medal of Merit which is offered annually by that Society on the occasion of its congress.——The municipal engineers of Paris have discovered the existence of some alarming cracks and settlements in the ironwork of the Caulaincourt Bridge, which is of quite recent construction and crosses the Montmartre Cemetery. ——The engineers of the Paris, Lyons, and Mediterranean Railway Company hope that the interior and the rails of the new Paris terminus will be finished for the Exhibition of 1900, although the erection of the buildings forming the principal and permanent façade will not be commenced till after the exhibition.——An art exhibition will be held on the first platform of the Eiffel tower from May 10 to August 31 next.——M. Henri Leriche, the painter, has been commissioned to carry out the artistic decoration of the ceiling and great frieze in the banqueting hall of the Préfecture at Nice.—— A competition has just been announced for the erection of an Hôtel de Ville in the town of Asnières, near Paris. The expense of this building is estimated at 700,000 francs.——The jury in the competition promoted by the town of Nevers for the erection of a covered market has awarded the first premium to the design of the architect, M. Brazeau. The second premium has been allotted to M. Lutz.——There will shortly be unveiled in the Cemetery of Saint Germain, a monument, erected by public subscription, to the memory of the celebrated composer Félicien David.—— The second biennial exhibition of the Fine Art Society of Narbonne will be held from the 1st June, 1895, to the following 31st July.——In the banquet-hall of the Hôtel de Ville, of La Roche-sur-Yon, has just been placed the model of the statue of the painter Paul Baudry, which is about to be erected in that town.——The departmental Council of Isère has decided on the construction of a cogwheel railway from la Mure to la Salette, to facilitate for the numerous pilgrims and tourists the fatiguing ascent to the Calvary of la Salette, which has hitherto been possible only by a mule road.——At Pierrelatte, near Avignon and Orange, there have just been discovered, it appears, certain remains and architectural fragments which indicate the probable existence of the ruins of an ancient town buried several yards beneath the soil.——Five new lines of railway are about to be constructed in the department of Saône-et-Loire; from Autun to Chateau Chinon, from Bourbon-Larcy to Toulon-sur-Arroux, from Macon to Fleurville, from Monteau les Mines to St. Bounet, and from St. Marcel les Chalon to St. Martin en-Bresse.——There is some talk of constructing a tunnel through the hill known as the Ballon d'Alsace, in order to unite Nancy and Epinal to Belfort, by a strategical railway.——The demolition of the fortifications of the town of Cambrai, between the Robert and Notre Dame gates, is shortly to be commenced. ——An apoplectic seizure has just carried off, at the age of 60, the historical painter, Eugène Bellangé, son of Hippolyte Bellangé, who had a great reputation as a painter of military subjects, from 1830 to 1868. Eugène Bellangé was a pupil of Picot, and had also attempted the painting of military *genre*, but with less success. He has exhibited two pictures at the Champ de Mars this year.

MISCELLANEOUS.

ST. OLAVE'S GRAMMAR SCHOOL, SOUTHWARK.—An error occurred in our notice last week, page 331, of the Architectural Association's visits to the St. Olave's Grammar Schools. The electroliers were made under Messrs. Singer's supervision at their factory at Frome and not Stroud, as stated in our report.

SALE OF BOOKS.—Some handsomely-bound editions of standard illustrated works upon topography and the arts were recently sold at Sotheby's auction-rooms. The books comprised the following: "Landscape Annual," 1830-9, large India paper, plates by Prout, Roberts, and others (5*l.* 10s.); F. Litchfield's "Illustrated History of Furniture," 1892 (17s.); J. Drummond's "Old Edinburgh," one of 50 copies, imp. fo. (2 guineas); Ackermann's "Microcosm of London," 3 vols. (7*l.* 5s.); "Westminster Abbey," coloured plates by Mackenzie, 1812 (2*l.* 5s.); and "Cambridge University," 2 vols., coloured plates by Pugin and Mackenzie, 1815 (4*l.* 8s.); D. Roberts's "Sketches in Spain," 26 fine chromo-lithographs, imp. fo., (1*l.* 18s.); Lodge's "Portraits," in 6 vols., 1835 (4*l.* 10s.); J. Tickell's "Kingston-upon-Hull," 1796 (13s.); Walpole's "Description of Strawberry Hill," one of 100 copies, 1774 (17s.); R. W. Eyton's "Antiquities of Shropshire," 12 vols. in 6 (23*l.* 10s.); J. Nichols's "History and Antiquities of Leicestershire," including the original West Goscote Hundred, nearly all the copies of which were burnt in the fire at Messrs. Nichols, 4 vols. in 8, 1795–1811, a fine and rare work (130*l.*); R. Thoroton's "Nottinghamshire," first edition, 1677 (7*l.* 15s.); Stow's "Survey of London," by Strype, 1755 (8*l.* 5s.); S. Shaw's "Staffordshire," 2 vols., very scarce (28*l.*); G. Ormerod's "Cheshire," 3 vols., large paper, 1819 (21*l.*); J. Horsley's "Britannia Romana," 1732 (18*l.*); Dugdale's "Warwickshire," first edition, portrait and plates by Hollar, 1656 (7*l.* 10s.); Hogarth, a set of the original engravings, as sold by Mrs. Hogarth in 1784, the "Harlot's Progress," and others with the + before letters, (8*l.* 15s.); Turner and Parker's "Domestic Architecture of England," 4 vols., 1851-9, with Sir G. Scott's "Secular and Domestic Architecture," 1857 (3*l.* 3s.); Wilkinson's "Londina Illustrata," 2 vols., 1819-25 (2*l.* 12s.); Cussans's "Hertfordshire" (3*l.* 18s.); Maitland's "London," 2 vols., 1756 (17s.); Bayley's "Tower of London," 2 vols., 1821 (1*l.* 2s.); Dibdin's "Ædes Althorpianæ," 2 vols., large paper, 1822 (10*l.*); "The Rubens Gallery at the Luxembourg," 24 plates, 1710 (1*l.* 15s.); Hearne and Byrne's "Antiquities of Great Britain," with first impressions, 1786 (1*l.* 5s.); and Sir W. Stirling-Maxwell's "Charles V." (1*l.* 15s.)

MEMORIAL, ST. GILES' CATHEDRAL, EDINBURGH. —Warrant was granted on the 25th ult. in Edinburgh Dean of Guild Court to Sir Thomas Clark and others to erect a Marquis of Argyll memorial in St. Giles' Cathedral. In St. Elois' Chapel, known as the Hammermen's Chapel, on the right of the High-street entrance of the Cathedral, accommodation has been found for the memorial. The monument is 11 ft. 6 in. wide, by 12 ft. high. It consists of a surbase of alabaster, and this surbase supports at each side two marble columns and pilasters, with bronze ornaments and gilt caps and bases. These columns and pilasters support, in turn, an entablature, finished with pinnacles and pediment, enclosing the Argyll coat-of-arms. Between the pilasters is an elliptical arch, beneath which rests the recumbent figure of the Marquis upon a carved and moulded sarcophagus, above being an oval panel for the inscription, with margin adorned in scroll-work. The figure is attired in the costume of the period, and, while the right hand rests upon a Bible, the left clasps a sword. The monument is entirely composed of veined and white alabaster. A window for above the monument is painted in heraldic colours, and decorated with scroll-work and architectural enrichment. In the centre of it is the Argyll coat-of-arms, and in the other spaces are similar emblems of other notable Covenanters. The entire cost of the memorial is over 1,000*l.* Messrs. Sydney Mitchell & Wilson were the architects; the sculptor of the figure was Mr. Charles M'Bride, and that of the architectural part of the memorial, Mr. Wm. Beveridge. The window is being done by the Glass Stainers' Company, Glasgow.

PROPERTIES FOR SALE.—Cromwell House, Marlow, of late years the home, in his native town, of the late Edwin Clark, F.R.A.S., civil engineer, and inventor of the block system of signalling, and the hydraulic graving dock and canal lift. Born in 1814, his first employment in that profession was in surveying a proposed railway between Oxford and Brighton; he was next resident engineer for the Britannia and Conway tubular bridges. He designed several bridges, comprising swing-bridges at Rochester, Lyons, and Arnheim, Scarborough viaduct, and the Aire tubular bridge. The old house commemorates by its name the surrender of the town in 1642 to Parliament, when General Brown's forces were quartered there, having destroyed the wooden bridge which is said to have been built by the Templars of Bisham Abbey—Clifford Castle, Herefordshire (the birthplace of Fair Rosamond), whose ruins stand on an eminence overlooking the Wye; for two centuries a stronghold of the Lords de Clifford, to whom it passed by the marriage of Margaret, daughter and heir of Ralph de Cundy, or Toeni, to Walter Fitz-Richard, whose father, Fitz-Ponce, a son of Richard, second Duke of Normandy, had come to England with the Conqueror. Their son Walter founded here a cell, St. Mary's, of Cluniacs, subordinate to Lewes Priory, and endowed a nunnery at Godstow, "pro animabus uxoris meæ Margaretæ Clifford et nostræ filiæ Rosamundæ."

CENOTAPH, HAVERHILL, SUFFOLK.—The Congregational Church in the border town of Haverhill has just had a cenotaph erected upon the north-east wall of its interior. It is of late fourteenth century Gothic character, and has been designed by Mr. John S. Corder, architect, of Wimbourne House, Ipswich. The fabric, which measures 7 ft. high by 4½ ft. wide, is made mainly of English alabaster, the central shaft alone being of Irish marble from the Middleton quarries. The tablets are of dull white Castellino marble, and on these the inscriptions are incised and gilded. The work has been carried out by Messrs. Harry Hems & Son, of Exeter.

CHURCH BUILDING SOCIETY.—The committee of the Incorporated Church Building Society reported at the annual general court held on the 8th inst., at the Church House, Westminster, that the past year showed an amount of work done by the society almost exactly equivalent to that in 1893. Seventeen grants, amounting in the aggregate to 2,165*l.*, had been given for additional new churches, a sum of 385*l.* had been granted towards the rebuilding of seven churches, and for the enlargement and re-arrangement of forty-five churches 1,415*l.* had been given. Towards twenty mission buildings 635*l.* had been granted. The Archbishop of York presided. The report was adopted, and Sir F. S. Powell, M.P., then moved, and the Hon. G. H. W. Windsor Clive seconded, a resolution urging the society's claims for support.

THE SANITARY INSTITUTE.—At an examination for Inspectors of Nuisances, held in London on Friday and Saturday, May 3 and 4, 161 candidates presented themselves. Questions were set to be answered in writing on the 3rd, and the candidates were examined *vivâ voce* on the 4th. The following ninety-three candidates were certified, as regards their sanitary knowledge, competent to discharge the duties of Sanitary Inspectors:—A. T. Allen, Buckingham; C. T. Bacon, Fulham; R. H. Batchelor, London; H. G. Beams, Ewell; H. J. Bicknell, Southsea; A. J. Bobbitt, Homerton; H. Body, Walthamstow; A. C. Boucher, Fulham; R. E. Brown, London; M. Bryant, Wick, Bath; G. E. Burbidge, Fratton, Portsmouth; E. A. Burch, London; F. E. Butcher, Catford; T. W. Calverley, Shepherd's Bush; T. B. Campion, London; G. H. Carter, London; F. Catmur, Bow; A. P. Crosby, Farnham; H. G. Crothall, Brixton; T. Crover, London; W. B. Davis, Bedford; Miss L. Dean-Pitt, London; J. F. Dymond, Notting Hill; R. H. Ellis, Homerton; H. A. Endsor, Derby; E. M. Evans, Nottingham; F. F. Flinn, Brighton; W. Flowerdew, Upper Holloway; H. A. Glover, London; J. L. Greatorex, Wandsworth; G. Green, East Acton; Miss K. Hartnoll, London; F. W. Horey, New Cross; A. Hutchings, Brixton; G. B. Jacobi, London; A. Johnson, London; J. Keasley, Reigate; Miss N. M. Keogh, Chiswick; W. G. Kershaw, Barnsbury; A. E. Killick, Tunbridge Wells; M. A. Kirton, Devonport; J. Lake, Guildford; A. Lucas, Wandsworth; Miss G. H. Mackenzie, Edinburgh; W. G. Marshall, Southend-on-Sea; H. Martin, Birmingham; C. C. Mathews, London; F. W. McCarthy, London,

Miss R. McMillan, London; G. W. Morrison, London; T. H. Norton, Upton Park; D. E. Oliver, Islington; J. Pond, London; E. Poole. Worthing; A. J. Pope, South Norwood; J. T. Quinton, Stockton-on-Tees; F. J. Rayner, Manor Park; Miss E. Read, Chelsea; F. Redston, Tottenham; W. Redston, Tottenham; W. Reeves, Catford; Miss E. G. Ricardo, London; D. Ross, Hastings; E. T. R. Sadgrove, London; T. Salkield, Tottenham; W. Savage, Barnley; J. C. Scrivener, Tunbridge Wells; A. Shail, Isleworth; A. J. Shepherd, Stockwell; F. A. Simpson, London; J. Smart, Birmingham; H. Smith, Wandsworth; W. G. Stillman, Tunbridge Wells; G. B. Stoakes, Tunbridge Wells; C. Suttle, Chislehurst; T. H. Tarbit, Loftus, R.S.O., Yorks.; J. G. Thompson, London; Miss B. Thurgood, London; L. Tighe, Liverpool; T. W. Toogood, Croydon; E. Treharne, Ton Pentre R.S.O., Glamorgan; H. Vallance, Meadvale, near Redhill; J. D. Walker, London; G. W. Warr, Brighton; W. B. Watson, Leamington; Miss M. Whalley, Blackburn; G. White, London; N. White, Folkestone; Miss E. F. Whittaker, Southport; E. S. Wood, London; H. Wood, Ashford, Staines; W. J. Wreford, Barton Hill, Bristol; H. Wright, Hastings.——At the first examination in Practical Sanitary Science, on May 3rd and 4th, eighteen candidates presented themselves. Questions were set to be answered in writing on the 3rd, and the candidates were examined *vivâ voce* on the 4th. The following nine candidates were granted certificates in Practical Sanitary Science:—J. Andrews, London; T. Davies, Crewe; E. A. Evans, Clapham; T. L. Fearon, Folkestone; R. M. Gruggen, London; J. McKillop, Wandsworth; G. Miller, South Kensington; H. Puddenham, Brondesbury; G. Weeks, Junr., Bromley, Kent.

GLASGOW AND WEST OF SCOTLAND TECHNICAL COLLEGE.—On the 6th inst., in one of the class-rooms, the students of the architectural and building classes, conducted by Mr. Charles Gourlay, A.R.I.B.A., I.A., to the number of over 100, took advantage of the opportunity of his appointment to a professorship of architecture and building construction in the college to present him with a token of their great regard for him as a teacher and a friend. This took the form of an oak writing cabinet. Mr. Isaac Low, an old student of the college, presided, and Mr. James Lochhead, A.R.I.B.A., the instructor in the architectural studio, made the presentation, referring to Mr. Gourlay's qualities as a conscientious and painstaking teacher, and to his genial manner as a friend. Mr. Gourlay, in reply, expressed his deep sense of their kindness, and, speaking of the future of his classes, indicated his determination to make them still more successful.

LEGAL.

ACTION TO RECOVER COMPENSATION:

IN AN ARBITRATION UNDER THE METROPOLIS MANAGEMENT ACT, 1862.

In the Queen's Bench Division on the 6th inst. the case of the Mayfair Property Co., Limited, *v.* the London County Council came before Mr. Justice Wills, sitting without a jury, it being an action brought by the Mayfair Property Co., Limited, to recover from the London County Council compensation under the 74th Section of the Metropolis Management Act, 1862, for having been required to set back a new building situate at St. John's Wood.

It appeared that the plaintiffs, in December, 1892, acquired certain premises at the corner of Hall-road and Grove End-road, St. John's Wood, under a building lease, for the purpose of immediately rebuilding on the site. The old buildings were accordingly pulled down, and the plaintiffs immediately commenced to erect a large building, to be let out in flats. The London County Council thereupon required the plaintiffs to set their building back, in accordance with the certificate of the superintending architect, to a line which the plaintiffs alleged was at a greater distance than 50 ft. from the highway. The plaintiffs pulled down the building, carried it back to the line fixed by the superintending architect, and claimed compensation under Section 74 of the Metropolis Management Act, 1862. After the building had been completed the plaintiffs appointed an arbitrator to assess the amount of compensation to which they were entitled, but the County Council refused to have anything to do with the arbitration, on the ground that their notice was given under section 75 of the Metropolis Management Act, and not under section 74. The plaintiffs' submission was that the terms of the notice of the County Council came within section 74, and that they were entitled to the sum of 7,490*l.*, which had been awarded them by the arbitrator. The submission of the County Council, on the other hand, was that their notice was given under section 75 of the Act, and that they had always repudiated having acted under section 74.

Mr. Justice Wills, after hearing evidence, the correspondence read, and the arguments of counsel, said that he could not see how the plaintiffs were entitled to compensation, and gave judgment for the defendants, with costs.

Mr. Channell, Q.C., and Mr. R. C. Glen appeared as counsel for the plaintiffs, and Mr. Cripps, Q.C., and Mr. English Harrison for the defendants.

CAPITAL AND LABOUR.

PLUMBERS' STRIKE, LEICESTER. — All the plumbers at Leicester ceased work under the lock-out notices on the 2nd inst., and the employers are seeking non-union men to fill their places. The carpenters and joiners are still holding out, and they are being supplied by the General Carpenters' Union. The men declare that they will hold out for six months rather than give way to work with non-unionists or sanction piecework.

BUILDING TRADE LABOURERS, HALIFAX.—The building trade labourers are continuing work at Halifax, the masters having agreed to advance the wages from 5½d. to 6d. per hour.

THE LEEDS BUILDING TRADE DISPUTE.—A special meeting of the members of the Leeds District of the Amalgamated Society of Carpenters and Joiners was held in the St. James's Hall, on the 7th inst., to consider the advisability of making a levy upon all unionists who, having received the advance sought from their masters, are now at work. The amount of the weekly levy proposed was debated at some length, and eventually the proposal that it should be 4*s.* a week was unanimously carried. The Leeds district comprises about 790 members, of whom fully 350, according to the officials of the union, are proceeding with their work on the new conditions of 8½d. per hour. The masters, however, deny this statement, their estimate of the number of men who have resumed employment being considerably less.

MEETINGS.

FRIDAY, MAY 10.

Architectural Association. — Mr. John Belcher on "Treillage." 7.30 p.m.

SATURDAY, MAY 11.

St. Paul's Ecclesiological Society.—Visit to the Churches of Kingsbury and Hendon. Trains leave Baker-street for Kingsbury at 2.50 and 2.59.

Edinburgh Architectural Association.—(1) Visit to the "Thomas Coats' Memorial Church," Paisley; (2) Visit to Paisley Abbey.

MONDAY, MAY 13.

Surveyors' Institution.—Mr. R. E. Middleton on "Village Water Supplies." 8 p.m.

Society of Arts (*Cantor Lectures*).—Mr. James Douglas on "Recent American Methods and Appliances employed in the Metallurgy of Copper, Lead, Gold, and Silver." IV. 8 p.m.

Clerks of Works' Association (*Carpenters' Hall*).—Paper by Mr. F. W. Atterbury. 7.30 p.m.

TUESDAY, MAY 14.

Institution of Civil Engineers (*in the Temporary Offices, No. 9, Great George-street*).—Presentation of the list of persons nominated as suitable for the offices of President, Vice-Presidents, and other Members of Council for the ensuing year. 8 p.m.

WEDNESDAY, MAY 15.

Carpenters' Hall, London Wall (*Lectures for shop and outdoor Foremen*).—Mr. James Bartlett on "The Setting-out and Construction of Staircases and Joints in Joinery." 8 p.m.

British Archæological Association.—Miss E. Bradley on "Glastonbury Abbey." 8 p.m.

Builders' Foremen and Clerks of Works' Institution.—Ordinary meeting of the Members. 8 p.m.

Society of Arts.—Captain W. de W. Abney, F.R.S., on "Means for Mitigating the Fading of Pigments." 8 p.m.

THURSDAY, MAY 16.

Architectural Association.—Annual Soirée to be held at the Head-quarters of the London Scottish R.V., James-street, Buckingham Gate, S.W. 8 p.m.

Society of Antiquaries.—8.30 p.m.

Society for the Encouragement of the Fine Arts.—Mrs. Salwey on "The Art of Metal Working in Japan." 8 p.m.

SATURDAY, MAY 18.

Institution of Junior Engineers.—Visit to the Imperial Institute, to inspect the heating system, and other engineering features.

RECENT PATENTS:

ABSTRACTS OF SPECIFICATIONS.

6,870.—WINDOWS: *J. Pride.*—To ensure safety whilst cleaning or decorating windows, a chair or platform is, according to this patent, adapted to be attached by means of lugs to the wall or window-sill. The chair is made after the shape of a sickle, the point or blade being adapted to fit under the window-sill outside, the straight or handle portion projecting through the window opening into the interior of the building, and fastened by the lugs aforementioned. A back may be attached by suitable rods, and the whole made to fold up so as to occupy very little space.

8,204. — CHIMNEY-POT: *H. Barham.* — Relates to methods of encouraging up-draught, &c. The bottom of the chimney-pot is constructed with an inner case extending half its length. Holes are made in the pot near the base, and air is conducted upwards into the inside by means of spiral passages between the inner and outer case.

8,508.—CHIMNEY-CAPS: *J. Mulligan.*—For preventing smoky chimneys, on buildings, railway carriages, &c., a combination of several upright metal strips or laths are used, each strip having a series of oblique corrugations, and so arranged that the raised portions of each strip shall be in a line with the depressed portion of the adjacent strips. Openings are thus left at the intersection of the several strips for the outlet of smoke or air. The parts, when together, form the walls of the cap, which may be surmounted with a suitable cover.

9,701.—FLOOR GRATINGS: *P. Knobel.*—A grating for covering openings in floors and pavements, to admit light, &c., comprising a number of metal bars spaced apart sideways and vertically in the direction of their width, and each of a cross sectional form, having edges or side portions which are inclined towards each other, and are of undulating or corrugated form.

16,381.—PAINT: *J. McLintock.*—Relates to a quick-drying antifouling paint for applying to the submerged part of ships or other vessels, composed of 40 per cent. of oxide of zinc, 12 per cent. of linseed oil mixed with suitable quantities of tallow, benzoline, gum damar, resin, and turpentine.

1,445.—GULLY-TRAP: *T. Harris.*—Comprises a combined gulley-trap, air inlet, and inspection chamber. A gulley-trap is formed with an opening of suitable size above the trap or mid-feather, through which fresh air is admitted into drains for ventilating purposes. The inspection shaft is formed at any angle so as to give any lead for connecting to a drain or sewer.

3,766.—WOOD PAVING: *W. Duffy.*—Refers chiefly to methods of connecting wood-block paving. The blocks are cut of an oblong shape and held together by dowels, formed with a swell or boss in the middle.

3,842.—ROOFING: *H. Bongartz and another.*—A water-tight zinc roofing in which the nails used to fasten the plates are also covered by zinc and prevented from being destroyed. The single plates of zinc are provided on two opposite edges, with a roll forming in section a round hook, so that when the plates are laid the rolls of the upper row enter into those of the lower. The continuous rolls thus formed are provided with caps at top and bottom, to prevent the entrance of water; these are soldered in position. The nails are driven through strips which are pushed into the roll at each plate, so that they lie below and are fastened to the wood covering.

8,468.—PLASTERING: *A. Keim.*—A material for wall-plastering, priming, casting, &c., capable of withstanding the influence of the weather. Composed by mixing together ground china clay, white chalk, glass powder, and sulphuret of sodium. After being burnt the product is again ground and mixed with marble sand.

8,520.—LADDERS: *R. Greggor.*—For connecting the ends of ladders. The narrow end of a ladder is made to fit between the ends of the ladder to be connected, which is placed in position and rests by means of suitable slots upon the top rung of the other ladder, which projects beyond both sides. A pivoted strap is used for further securing the two together.

9,352.—CISTERNS: *H. Chubb.*—Relates to a water-waste preventing cistern, fitted with an improved inlet-valve and pull-lever. Also an open top float, with its hollow arm connected to the outlet nipple by an india-rubber connexion, and having a suspended valve secured by suitable links to an arm in the cistern.

9,415. — DRAIN-CLEARING: *F. Lynde.* — Chiefly for removing luting material used in making the joints. One or more discs holding rings of indiarubber are mounted upon a flexible cone, either separate or in combination with thin pieces of steel or wire.

10,231.—DOORS: *E. Taylor.*—Deals with methods of attaching finger-plate buttons to finger-plates. A tapped metal disc is fitted into the button and screws into a metal peg which is passed through a hole in the plate from the back.

10,416.—KILNS: *J. Briggs.*—Describes methods for constructing kilns for burning limestone, cement, &c., having arches at different levels in combination with fuel-shoots for properly distributing the fuel.

18,179.—CISTERNS: *W. Appleford.*—Methods for rendering the flush more effective in syphon-flushing cisterns. The compressor, or cap of the syphon is provided with waterways extending from the base to the top of the cap, by which the body of water within is rendered more sensitive to the movements of the lever. In place of being formed round the compressor, the waterways may be formed round the receiver. In case the outer casing is fixed, a disc is provided for lifting the water over the mouth of the discharge.

NEW APPLICATIONS FOR LETTERS PATENT.

APRIL 16.—7,578, W. Neal, Drain-pipes, &c.—7,591, W. and H. Jones, Fireproof Tile Ceilings, Partitions, &c.—7,608, P. Kirkup and J. Hodgson, Furnaces and Kilns.—7,622, R. Walker, Artificial Stone Slabs, Bricks, Tiles, &c.—7,635, W. Youlten, Casements and Doors.—7,655, L. Flatau, Metallic Roofing.—7,676, J. Rüegg, Lever-clamp.

APRIL 17.—7,689, C. Breach, Drain Junction and Sockets for Connecting Drains with Existing Sewers.—7,690, D. Richmond, Syphons for Water-closets and other Cisterns. — 7,721, T. Dunsire and Lawrie, Securing Windows, Doors, &c.

APRIL 18.—7,757, F. Ownsworth, Tying Cavity Walls.—7,775, J. Gillott, Attachments for Door-knobs, &c.

APRIL 19.—7,821, R. and G. Parry, Support for Eave-spouting or Troughing.—7,825, T. Kemp, Socket to Drain and Soil-pipes.—7,833, J. Carroll and W. Moore, Ridge Tiles.

APRIL 20.—7,908, T. Rhodes and R. Gaunt, Syphons for Flushing Cisterns, Tanks, &c.—7,912, G. Cross and W. Allen, Channel Bends and Junctions for Manholes.—7,914, C. d'Enghien and others, Kilns or Ovens for Firing Terra-cotta, &c.—7,920, W. Joy, Drying Slurry by the Waste Heat from Cement Kilns.—7,933, C. Brawn, Preventing Draught and Noise of Doors.

APRIL 22.—7,968, T. Wilmot and M. Morgan, Coating Paving Blocks, other-like Blocks, &c.—7,993, W. Birch, Chimney and Ventilating Cowls.

APRIL 23.—8,035, E. Hughes, Wood-working Machines.—8,067, J. Torrens, Mallets.

APRIL 24.—8,095, J. Tennant and others, Gold Paint for Interior Gilding.—8,122, J. Jeffreys, Ventilating Fans.—8,127, P. & D. Rordorf, Fastening Devices or Clamps, for building purposes, &c.—8,154, S. Gamble, Ventilating Sash-fastener.

APRIL 25.—8,216, B. Vandersteen, Water Meters.—8,219, R. Hopkins, Holdfast or Window Sash Suspender.—8,224, R. Vaux, Chimney Cowls, &c.—8,227, W. Blunden, Window-sash Fastener.—8,229, R. Sherrington, Cowls and Ventilators.

APRIL 26.—8,263, E. Bond, Set-squares, &c.—8,324, W. Youlten, Sash Centres.

APRIL 27.—8,365, H. Sturm, System of light and economical building Construction.—8,382, A. Wilcken and E. Bourgois, Drain-traps for water-closets.

CONTRACTS AND PUBLIC APPOINTMENTS.

CONTRACTS.

Nature of Work or Materials.	By whom Required.	Architect, Surveyor, or Engineer.	Tenders to be delivered.
Alterations to Church, Barlby, near Selby, Yorks	.....	G. H. Fowler	May 14
Road Improvements, Prospect-row	Bridlington U.D.C. ..	R. R. Brown.....	do.
Granite Road Metal (3,000 tons).....	Uppingham R.D.C. ..	*Official*	do.
Five Houses and Two Shops, Cawdor-street, Farnworth, Lancs..... ..	Farnworth & Kersley Indus. Co-op. Soc.	do.	do.
Road Materials	Luton Town Council	do.	do.
School, Kenton	Harrow (U.D.) School Board	do.	do.
Classrooms	Marwood (Devon) Sch. Board	do.	do.
*Road Works	Kingston-upon-Thames Corp.	do.	May 15
	do.	do.	do.
*Broken Granite and Flints			
Leicestershire Paving Setts (2,000 tons), near Stoke-on-Trent	Fenton U.D.C.	S. A. Goodall	do.
Laying 10,000 yds. super. Paving Setts..	do.	do.	do.
House, Sheffield-road, Barnsley		Wade & Turner	do.
Broken Granite	MarketBosworthR D C	Wm. Thorpe	do.
Additions to Schools, Durham	West Comforth (U.D.) School Board	H. T. Gradon	do.
	W. Jessop	H. Ashwell	do.
Sixteen Houses, Agbrigg, Sandal, Yorks .	Chiswick U.D.C. ..	A. Ramsden	do.
*Making-up Roads	Slaithwaite & Lingards (U.D.) School Board	J. Berry.....	May 16
Schools, &c. Nelida, Yorks	Chatham Corp.	C. Day	do.
	Hollingworth U.D.C.	Foster, Son, & Co.	do.
York Stone Paving, &c.			
Sewerage Works	Trecynon Build. Club	G. A. Treharne	do.
Twenty Houses, Rhydywaun, near Aberdare	.....	R. H. Worth	do.
Pipe Sewer, North-road, Saltash..... ..			
Additions, &c. to Ramsden Mills, Golcar, Yorks	.....	J. Kirk & Sons.....	do.
Additions, &c. to St. John's National Schools, Dewsbury	.....	J. Lane Fox	do.
Church and Schools, Aberavon, Mon. ...	.....	Thomas & James.....	do.
*Wood Paving	Clerkenwell Vestry ..	*Official*	do.
*Works, Liverpool, Manchester, &c. &c. ..	M. R. Co.	do.	do.
Nine Houses, Hall-lane, Armley, Leeds ..	Leeds Indus. Co-op. Soc.	do.	do.
Flint and Granite Road Metal	Cuckfield(Sussex)R.D.C	do.	do.
Reservoir, Heyswood, Hartford	Northwich U.D.C.....	do.	do.
School, North Links	Montrose (N.B.) Sch. Board	do.	May 17
Shops and Houses, Wellgate, Rotherham	A. W. Humphrey	J. Platts..... ..	do.
Alterations, &c. to Mechanics' Institute, Bradford, Yorks	.....	T. C. Hope	do.
Three Shops and Houses, Churchgate	Stockport Corp.	J. Atkinson	do.
*Sewerage Works.....	Barrow-upon-Soar R.D.C.	J. B. Everard	do.
Church Restoration, Killington, Kendal..	.....	J. F. Curwen	May 18
Additions to School, Lorton, Cockermouth	.....	M. Marsh	do.
School (National), Ryhill, Yorks	Rev. G. S. Filliter....	.. ...	do.
Granite Road Metal, &c.	Ely U.D.C.	W. McKelvie	do.
Pair of Cottages, St. Gile's, Langford	Churchwardens	P. M. Beaumont.....	do.
Road Metal (10,000 tons).....	Bradford Corp.	J. H. Cox	do.
Two Cottages, near Armagh Prison	General Prisons Board (Ireland)	*Official*	do.
*Earthenware Sewer Pipes	Watford U.D.C.	do.	May 20
*Town Hall Buildings, &c.	Rotherhithe Vestry ..	Murray & Foster.....	do.
Shop, &c. Ystrad Rhondda, Glam.....	D. Lloyd	J. Rees	do.
Additions to Workhouse, Gibbet-lane ...	Halifax Union	Horsfall & Williams..	do.
Sewerage Works, near Burnley	Barrowford U.D.C. ..	J. T. Landless	do.
Lodge, West View Park, Halifax	McCrea & Robinson ..	.....	do.
Additions, &c. to Schools, Ipswich	.....	F. Brown	do.
Two Houses, St. Stephen's-road, Saltash..	Willesden, u.t. 76½ yrs., g.r. 15*l.* 15s., r. 45*l.*, 370*l.* ;	M. Pearce	do.
*Two Galloway Boilers	Edmonton Union	T. E. Knightley	May 21
*Tar Paving Works	do.	do.	do

CONTRACTS—*Continued.*

Nature of Work or Materials.	By whom Required.	Architect, Surveyor, or Engineer.	Tenders to be delivered.
Rebuilding Market, Oxford-street	Swansea Town Council	Wilson & Moxham ..	May 21
Children's Homes, Rothwell Haigh, near Leeds	Hunslet Union	R. J. Smith	do.
Additions, &c. to House, Fernhill-yard ..	Bury (Lancs.) Corp. ..	*Official*	do.
Glazed Sanitary Pipes, Belle Vue	Gorton (Lancs.) U.D.C.	do.	do.
*Paving Materials, Hire of Steam Roller, &c.	Greenwich Board of W.	do.	do
Alterations, &c. to Workhouse	Coventry Union	H. Quick	May 22
*Concrete Paving	Hackney Vestry.....	J. Lovegrove	do.
Pipe Sewer, Union-place District	Dungannon (Ireland) Sanitary Authority..	W. J. L. D. Mears	May 23
Road Metal, Granite, Flints, &c.	Canterbury Town C...	A. H. Campbell	do.
*Heating Apparatus, S. E. Hospital	Met. Asylum Board ..	*Official*	do.
*Cemetery Chapel, Lodge, &c.	Boro' of Croydon	do.	do.
*Waterworks	Suffolk County Asylum	G. & F. W. Hodson ..	May 24
Granite and Slag Metal (12,500 tons).....	Sleaford (Lincs.)R.D.C.	*Official*	May 25
*Three Lancashire Boilers	Manchester Corp.	T. de Courcy Meade ..	d o.
*Cast-Iron Pipes	do.	do.	do.
*Alterations, Nash Lighthouses, near Bridgend..	Trinity House	*Official*	May 27
*Erection of Schools	Swindon School Board	N. Drew.....	do.
*Stable Fittings, Provender Machinery....	Boro' of West Ham ..	L. Angell	May 28
*Enlargement of Post Office, Newmarket ..	Coms. of H. M. Works	*Official*	do.
*Erection of Schools	Enfield School Board	G. E. Lawrence	May 30
*Making-up Roads	Dorking U.D.C.	G. S. Matthews	do.
*Painting, &c. Works at Infirmary.....	Fulham Union	*Official*	do.
Public Baths	East Retford Town C.	J. D. Kennedy	May 31
Bank Premises, Commercial-street, Halifax	Halifax and Huddersfield Un. Banking Co.	Horsfall & Williams ..	do.
Sewerage Works	Alfreton (Derby)U.D.C.	W. H Radford	June 3
Storage Reservoir, &c.....	Aberdare U.D.C.	W. Fox	June 4
Sewerage Works (2,830 yards)	Poole U.S.A.....	J. Elford	June 6
Steel Principal Roof at Terminus, Belfast	G. N. Ry. Co. (Ireland)	W. H. Mills	June 10
*Painting, &c. Works, Warrington ...	War Department	*Official*	No date
*Painting Works, Wellington Barracks....	do.	do.	do.
*Superstructure of New Bank, Leeds.....	William Williams, Browne, & Co.	A. Waterhouse & Son	do.
Farmhouse, Ganaway, Millisle, Ireland ..	Wm. Ewart	T. Pentland	do.
Shops and Offices, Westgate, and Barry-street, Bradford	.....	J. Jackson.....	do.
Church (St. Alban's), Burnley	.....	Melland Taylor	do.
Residence, Stanhope Park Estate, Abergavenny	.....	E. A. Johnson	do.
Five Shops and Houses, Domestic-street, Holbeck, near Leeds	Thos. Brittain.....	.....	do.
Residence, Charlemont, Moy, Ireland	Rev. John Watson ...	.....	do.

PUBLIC APPOINTMENTS.

Nature of Appointment.	By whom Advertised.	Salary.	Applications to be in.
*Clerk of Works	Flomesgate R.D C.....	.....	May 16
*Clerk of Works	Newcastle-upon-Tyne Lunatic Asylum	41.....	do.
Clerk of Works	Portsmouth Corp.	3*l.* per week	May 21
*Surveyor	Whitechapel Bd. of W.	400*l.* &c.	May 22
*Clerk of Works	Langport R.D.C.....	.....	do.
*Surveyor's Assistant	LondonCountyCouncil	130*l.*.....	do.
*County Surveyorship (Ireland)	Civil Service Com.....	.....	do.
*Clerk of Works	Southend-on-Sea Corp.	2*l.*.....	May 28
*Clerk of Works	Ilford School Board ..	3*l.* 3s.	No date

Those marked with an asterisk (*) are advertised in this Number. Contracts, pp. lv., vi., vii., viii., ix., *and* xxi. *Public Appointments, pp.* xviii. *and* xix

PROVISIONAL SPECIFICATIONS ACCEPTED.

5,820, W. Simmons, Window-sashes.—5,987, C. Clifton, Planing Machines.—6,032, W. Dodwell, Stop-taps for the prevention of pipe bursting.—6,227, F. Brooke, Slow Combustion Fireplaces.—6,590, E. Glaskin, Gate and other Locks.—6,994, H. H. Lardner, Gate Fastenings.—5,161, E. Verity and B. Banks, Sliding Ventilators.—5,464, W. Metcalff, Draught and Rain Excluders and Door-silencers. —6,255, J. Leeming, Pipes or Channels for Drains and Sewers, and in the Jointing of the same.—6,614, R. Adams, Opening, Closing, Regulating, and Fastening Swing and other Windows, &c.—6,696, G. King, Flanged Pipe-joints. —6,933, A. Dykes and H. Hancock, Water-pipes.—7,007, S. Hawkins, Frames for Upholstery.—7,061, A. Brown and H. Pruce, Connecting Door and other Knobs to their Spindles.—7,097 and 7,098, W. Youlten, Casements.—7,277, S. Smith, Drainage, Flooring, and Paving.—7,314, G. Anderson, Stone-sawing Machinery.

COMPLETE SPECIFICATIONS ACCEPTED.

(Open to Opposition for Two Months.)

8,319, J. Stidder, Water-closets, and in flushing, trapping, and supplying same with water.—8,444, J. Braithwaite, Manhole and Ventilator for Sewage-pipes.—11,786, S. Taylor, Casement Windows. — 12,753, J. and J. Hampton, Flooring-cramps and Mitre-cramps.—12,838, W. Lynch, Slate and Tile Fastener with Sliding Collar and Pin.—18,251, W. Ingham and B. Langton, Machines for making Sanitary Pipes.—2,184, G. Butt, Picture-frame Mouldings.—5,497, J. Mark, Water-pipes.—5,751, A. Lübbe and W. Keating, Locks for Sliding Doors.—11,184, J. Cartland, Door-bolt Indicators. — 12,021, C. Wenste, Closing and Opening Gas-pipes to connexion.—12,153, G. Wheeldon, Securing Window Sashes.—13,204, W. Veitch, Level Surface Hinge.—14,527, W. Slack, Gates.—5,232, A. Boult, Wood-cutting Machines.—6,134, W. Sykes, Yard Gullies.

SOME RECENT SALES OF PROPERTY:

ESTATE EXCHANGE REPORT.

APRIL 24.—By *Arber, Rutter & Waghorn:* i.g.r. of 260*l.*, Queen's-gate, Kensington, u.t. 56 yrs., g.r. 110*l.*, 3,205*l.*—By *Douglas Young:* 4, Grant-rd., Clapham Junction, f., r. 39*l.*, 410*l.* ; 2, Grant-rd., u.t. 43 yrs., g.r. nil, 190*l.* ; 17, 19 and 21, Lavender-rd., u.t. 43 yrs., g.r. 18*l.* 18s., r. 93*l.* 12s., 540*l.* ; 117, Albany-st., Regent's-pk., u.t. 20 yrs., g.r. 15*l.*, 330*l.* ; 144, The Grove, Hammersmith, u.t. 896 yrs., g.r. 10*l.*, 280*l.* ; 152, The Grove, u.t. 76½ yrs., g.r. 10*l.*, 270*l.* ; 1, The Crescent, Stonebridge-pk., Willesden, u.t. 76½ yrs., g.r. 15*l.* 15s., r. 45*l.*, 370*l.* ; 16 and 17, Stonebridge-pk., u.t. 75 yrs., g.r. 25*l.* 4s., r. 100*l.*, 710*l.* ; 10 to 13 and 15 to 17, St. Alban's-bldgs., Lambeth, u.t. 22 yrs., g.r. 20*l.*, 115*l.* ; 22, Glenister-rd., Greenwich, u.t. 63 yrs., g.r. 4*l.*, r. 31*l.* 4s., 145*l.* ; Bachelor's Hall, Hundon, Suffolk, and 8a. or. 32p., f., 210*l.*—By *C. H. Brown:* 173, Southgate-rd., Hackney, u.t. 36½ yrs., g.r. 5*l.*, r. 40*l.*, 350*l.*—By *Inman & Co.:* 17, Salusbury-rd., Kilburn, u.t. 67 yrs., g.r. 7*l.* 10s., 300*l.*—By *Rutley, Son, & Vine;* 29, St. Mark's-cres., Regent's-pk., u.t. 49 yrs., g.r. 10*l.*, 470*l.* ; Mill Bridge Dairy, Hertford-rd., Edmonton, f., r. 32*l.*, 455*l.*—By *E. W. Richardson & Son:* 35, Handforth-rd., Brixton, u.t. 93½ yrs., g.r. 8*l.* 10s., r. 50*l.*, 440*l.*—By *C. C. Taylor & Son:* 20 and 21, Beaumont-sq., Mile End, u.t. 33 yrs., g.r. 9*l.*, r. 64*l.*, 545*l.* ; 73, 75, and 77, Dempsey-st., u.t. 18 yrs., g.r. 10*l.* 10s., 530*l.*—By *Robert Tidey & Son:* 11, City Garden-row, City-rd., u.t. 29½ yrs., g.r. 6*l.* 5s., 215*l.* ; "Brendon," Hampton-rd., Teddington, f., r. 58*l.*, 1,000*l.* ; "Bolton House," Bolton Gardens, Chiswick, and coach-house, f., r. 58*l.*, 750*l.* ; 79, Duke-rd., f., r. 45*l.*, 750*l.* ; 14, 16, 18, and 20, The Ter., f., r. 160*l.*, 2,355*l.* ; corner plot of land, High-rd., f., 1,000*l.*—By *Salter, Rex, & Co.:* 282, Kentish Town-rd., Kentish Town, f., 40*l.*, 1,205*l.* ; 284, Kentish Town-rd., f., r. 52*l.* 10s., 1,040*l.* ; 15, Hargrave-rd., Upper Holloway, u.t. 64 yrs., g.r. 4*l.*, 280*l.*

APRIL 25.—By *G. Trollope & Sons:* 12, Carteret-st., Westminster, u.t. 65 yrs., g.r. 30*l.*, r. 148*l.* 3s., 2,050*l.*—By *C. C. & T. Moore:* 56 to 62 (even), Redman's-rd., Mile End, u.t. 18 yrs., g.r. 12*l.*, r. 109*l.*, 520*l.* ; 132 and 133, St. George-st., St. George's East, f., r. 76*l.*, 800*l.*—By *Stimson & Sons:* 1 to 9 (odd), Attwell-st., Peckham, u.t. 55 yrs., g.r. 10*l.*, r. 97*l.*, 10s., 600*l.* ; 28 and 30, Sunwell-st., f., r. 88*l.* 4s., 390*l.* ; 32 and 34, Sunwell-st., f., r. 71*l.* 4s., 730*l.* ; 38, Sutton-st., East, Commercial-rd., East, u.t. 64 yrs., g.r. 8*l.*, 220*l.*—By *H. Hemmings:* Two fields at North Heath, Pulborough, Sussex, containing 2a. 2r. 12p., c., 40*l.*—By *Farebrother, Ellis, Clark, & Co:* l.g.r. of 71*l.* 8s., 10 to 13, Leigh-st., St. Pancras, u.t. 11 yrs., g.r. 36*l.*, 120*l.* ; 321, Holloway-rd., Holloway, and stabling, f., r. 80*l.*, 1,780*l.* ; 89, High-st., Lewisham, f., r. 40*l.*, 650*l.* ; 97 to 109 (odd), High-st., and 2 to 14 (even), Lewis Grove, f., 3,890*l.* ; 41, 43, and 45, Vansittart-rd., Forest Gate, f., r. 64*l.*, 625*l.*—By *H. J. Bliss & Son:* 20, 26, 28, and 30, Dumont-rd., Stoke Newington, u.t. 79 yrs., g.r. 24*l.*, 995*l.* ; 40, Arundel-sq., Barnsbury, u.t. 62 yrs., g.r. 8*l.*, 400*l.*—By *Newbon & Co.:* 518, Caledonian-rd., Holloway, u.t. 47 yrs., g.r. 10*l.*, 410*l.* ; 78, Tollington-pk., f., r. 50*l.*, 700*l.* ; f.g.r. of 37*l.*, Marlborough-rd., reversion in 70 yrs., 1,130*l.*—By *Faverman & Co.:* "Oatlands," Kenilworth-rd., Leamington Spa, f., 1,800*l.* ; 48, Leam-ter., f., r. 30*l.*, 400*l.*

APRIL 26.—By *Dyer, Son, & Hilton:* F.g.r. of 44*l.* 10s., Wisteria-rd., Lewisham, reversion in 1991, 1,200*l.*—By *Montagu, Robinson, & Watson;* 234, Evering-rd., Clapton, u.t. 78 yrs., g.r. 8*l.* 10s., r. 54*l.*, 500*l.* ; 21, Rushmore-rd., u.t. 75 yrs., g.r. 5*l.*, r. 34*l.*, 330*l.* ; 98, Cromer-st., Gray's Inn-rd., u.t. 41 yrs., g.r. 4*l.*, r. 55*l.*, 570*l.* ; 15, Broom-st., Bryanston-sq., u.t. 5 yrs., g.r. 7*l.* 17s. 6d., r. 60*l.*, 140*l.* ; 319, Ladbroke-grove, Notting Hill, u.t. 72 yrs., g.r. 10*l.* 10s., 250*l.*—By *Dolman & Pearce:* 19, Oppidans-rd., Regent's-pk., u.t. 70 yrs., g.r. 10*l.*, 650*l.* ; 89, Malden-rd., Kentish Town, u.t. 55 yrs., g.r. 8*l.*, 375*l.* —By *Nash & Son:* 92, Tachbrook-st., Pimlico, u.t. 46 yrs., g.r. 8*l.*, 400*l.* ; 23, St. Oswald's-pl., Vauxhall, and 27, Tyer's-ter., u.t. 10 yrs., g.r. 2*l.* 15s., 130*l.*—By *Green & Son:* "Park House," Milton-rd., Gravesend, u.t. 38 yrs., g.r. 16*l.* 10s., 100*l.* ; 159 to 169 odd, Stonebridge-bldgs., Tottenham, u.t. 85 yrs., g.r. 77*l.* 10s., r. 220*l.*, 1,200*l.*—By *Baker & Sons:* 4, 5, and 6, Stanhope-st., Strand, building site, area nearly 2,900 ft., f., 1,850*l.* ; shop plot, Harrow-road, Kensal Green, f., 60*l.* ; f.g.r. of 8*l.* 13s., Collingwood-rd., Sutton, reversion in 75 yrs., 180*l.* ; f.g.r. of 13*l.*, Beulah-rd., reversion in 79 yrs., 280*l.* ; f.g.r. of 5*l.* 5s., reversion in 80 yrs., 115*l.* ; f.g.r. of 17*l.*, reversion in 83 yrs., 350*l.* ; f.g.r. of 56*l.* 5s., reversion in 82 yrs., 1,150*l.* ; f.g.r. of 28*l.*, reversion in 85 yrs., 570*l.* ; f.g.r. of 17*l.*, reversion in 84 yrs., 350*l.* ; f.g.r. of 13*l.*, reversion in 85 yrs., 275*l.* ; f.g.r. of 22*l.* 10s., Collingwood-rd., reversion in 87 yrs., 485*l.* ; f.gr. of 173*l.* 10s., Sydney-rd., reversion in 84 yrs., 3,490*l.* ; f.g.r. of 33*l.* 10s., reversion in 86 yrs., 670*l.* ; f.g.r. of 15*l.* 10s., Collingwood-rd., reversion in 85 yrs., 410*l.* ; f.g.r. of 16*l.* 10s., Park-ter., reversion in 84 yrs., 330*l.* ; f.g.r. of 13*l.* 10s., Robin Hood-lane, reversion in 88 yrs., 320*l.* ; f.g.r. of of 24*l.*, Adelaide-ter., Selhurst, reversion in 68 yrs., 510 ; f.g.r. of 5*l.*, reversion in 93 yrs., 115*l.* ; 3, 5, and 6, Collingwood-rd., Sutton, f., 62*l.* ; a Slaughter-house and Stables, Sydney-rd., f., 100*l.* ; a block of land, Falcon-rd., Battersea, 6,385 ft., f., 1,200*l.* ; two plots of land, Collingwood-rd., Sutton, f., 17*l.*

APRIL 25.—By *Protheroe & Morris* (at Finchley): "Berridale," Regent's-pk.-rd., Finchley, u.t. 84 yrs., g.r. 6*l.* 10s., r. 36*l.*, 280*l.* ; "Woodlea Villa," "Ruhstein," and "Southgate Villa," u.t. 84 yrs., g.r. 20*l.* 6s., r. 79*l.*, 480*l.* ; "Clyde Villa," "Argyle Villa," and "Stanley Villa," u.t. 83 yrs., g.r. 18*l.* 18s., r. 82*l.*, 480*l.* ; "Stafford House," Church End, u.t. 83 yrs., g.r. 6*l.* 10s., r. 25*l.*, 160*l.* ; five plots of building land, Torrington-pk., Friern Barnet, f., 165*l.* ; 13, Manchester-rd., Notting Hill, u.t. 67 yrs., g.r. 5*l.* 5s., 95*l.*

APRIL 29.—By *Broad & Wiltshire:* 13, Foubert's-pl., Regent-st., f., r. 80*l.*, 1,600*l.*—By *Joshua Baker & Son:* "Three Horse Shoes" public-house, Underhill, Barnet, c., r. 26*l.*, 805*l.*—By *T. G. Wharton:* 61, Grafton-rd., Kentish Town, f., r. 51*l.* 10s., 580*l.* ; 25, Mecklenburgh-sq., Gray's Inn-rd., u.t. 13½ yrs., g.r. 42*l.*, r. 150*l.*, 590*l.* ; 14, 15, 16, and 17, Tower-st., Bloomsbury, u.t. 56 yrs., g.r. 40*l.*, r. 314*l.* 10s., 1,810*l.*—By *Eastman Bros.:* 82, Anerley Pk., Anerley, u.t. 230 yrs., g.r. 15*l.*, 210*l.*—By *Driver & Co.:* F.g.r. of 140*l.*, Hinton-rd., &c., Camberwell, reversion in 72 yrs., 4,050*l.* : f.g.r. of 15*l.*, Coldharbour Lane, reversion in 79 yrs., 430*l.* ; f.g.r. of 30*l.*, Southwell-ter., reversion in 79 yrs., 780*l.* ; f.g.r. of 27*l.* 10s., Coldharbour Lane, reversion in 21 yrs., 1,100*l.* ; f.g.r. of 27*l.*, reversion in 47 yrs., 970*l.* ; f.g.r. of 20*l.*, reversion in 47 yrs.,

610*l.*; f.g.r. of 5*l.*, Harbour-rd., reversion in 47 yrs., 240*l.*; f.g.r. of 10*l.*, Cambria-rd., reversion in 47 yrs., 280*l.*; f.g.r. of 20*l.*, Park-ter., reversion in 47 yrs., 770*l.*; f.g.r. of 44*l.*, Coldharbour-lane, reversion in 47 yrs., 1,425*l.*; f.g.r. of 9*l.*, Harbour-rd., reversion in 47 yrs., 285*l.*; f.g.r. of 25*l.*, Vaughan-rd., reversion in 47 yrs., 675*l.*; f.g.r. of 43*l.* 3*s.*, Vaughan-rd., reversion in 46 yrs., 1,122*l.*; f.g.r. of 10*l.* 15*s.*, Vaughan-rd., reversion in 43 yrs., 290*l.*; f.g.r. of 18*l.*, Vaughan-rd., reversion in 38 yrs., 482*l.*—By *Prothero & Morris* (at Stratford): 12 and 14, Wadley-rd., Leytonstone, f., r. 39*l.*, 240*l.*; 38, Grove Crescent-rd., Stratford, u.t. 82 yrs., g.r. 10*l.* 10*s.*, r. 35*l.*, 230*l.*

APRIL 30.—By *Briant & Son*: 53, Studley-rd., Clapham, u.t. 42 yrs., g.r. 3*l.* 10*s.*, e.r. 42*l.*, 405*l.*—By *E. Fergusson Taylor*: "Brockley Lodge," Lyonsdown, Barnet, f., 910*l.*—By *Debenham, Tewson & Co.*: 7, Loraine-rd., Holloway, f. r. 42*l.*, 620*l.*; 19 and 20, College-lane, Kentish Town, f., r. 40*l.* 6*s.*, 310*l.*; 41 and 43, High-st., Lewisham, u.t. 65 yrs., g.r. 16*l.* 10*s.*, r. 82*l.* 10*s.*, 840*l.*; 5, Eliot-pk., Blackheath, u.t. 60 yrs., g.r. 10*l.* 10*s.*, r. 50*l.*, 350*l.*; 13, Eliot-pk., u.t. 59 yrs., g.r. 15*l.*, r. 65*l.*, 350*l.*; 16, Eliot-pk., u.t. 59 yrs., g.r. 21*l.*, r. 90*l.*, 650*l.*; 12, Walerand-rd, u.t. 59 yrs., g.r. 10*l.* 10*s.*, 250*l.*; i.g.r. of 30*l.*, Cressingham-rd., Lewisham, u.t. 67 yrs., g.r. 8*l.*, 380*l.*; 37, 41, 43 and 45, Cressingham-rd., u.t. 67 yrs., g.r. 6*l.* 10*s.*, r. 95*l.*, 835*l.*—By *W. W. Read & Co.*: 169, Croydon-rd., Anerley, u.t. 76 yrs., g.r. 15*l.*, 230*l.*—By *C. P. Whiteley*: 25, Park-rd., Haverstock-hill, u.t. 54½ yrs., g.r. 12*l.*, r. 70*l.*, 550*l.*; 2, Norwood-pl, Kensington, u.t. 28 yrs., g.r. 10*l.*, e.r. 65*l.*, 320*l.*; 11, Oxford-sq., Hyde-pk., u.t. 40½ yrs., g.r. 20*l.*, r. 185*l.*, 1,675*l.*—By *Driver & Co.*: f.g.r. of 6*l.*, Vaughan-rd., Camberwell, reversion in 33 yrs., 210*l.*; f.g.r. of 14*l.*, Vaughan-rd., reversion in 86 yrs., 400*l.*; f.g.r. of 10*l.*, Coldharbour-lane, reversion in 40 yrs., 325*l.*; f.g.r. of 41*l.* 12*s.*, Coldharbour-lane, reversion in 30 yrs., 1,400*l.*; f.g.r. of 25*l.*, Coldharbour-lane, Camberwell, reversion in 44 yrs., 920*l.*; f.g.r. of 20*l.*, Lowth-rd., reversion in 44 yrs., 700*l.*; f.g.r. of 16*l.* 15*s.*, Lowth-rd., reversion in 37 yrs., 465*l.*; f.g.r. of 4*l.* 8*s.*, Lowth-rd., reversion in 11 yrs., 230*l.*; f.g.r. of 16*l.* 16*s.*, Lowth-rd., reversion in 12 yrs., 860*l.*; f.g.r. of 52*l.* 19*s.*, Lowth-rd., reversion in 22 yrs., 1,955*l.*; f.g.r. of 25*l.*, Warner-rd., reversion in 21 yrs., 1,450*l.*; f.g.r. of 4*l.*, Warner-rd., reversion in 7½ yrs., 840*l.*; 133, Coldharbour-lane, f., r. 70*l.*, 1,300*l.*; 131, Coldharbour-lane, f., r. 60*l.*, 875*l.*; 119, Coldharbour-lane, f., r. 105*l.*, area 1½ acres, 1,725*l.*; 121, Coldharbour-lane, f., 430*l.*

MAY 1.—By *Henry Holmes & Co.*: 12, Union-st., Marylebone, u.t. 10½ yrs., g.r. 14*l.*, r. 84*l.*, 115*l.*; 21, Howland-st., Tottenham-ct.-rd., u.t. 19 yrs., g.r. 55*l.*, r. 95*l.*, 120*l.*—By *Baxter, Payne, & Lepper*: 138, 140, and 142, Norwood-rd., Norwood, and 4a. 1rd. 15p., f., 5,500*l.*; 6 to 13, St. Mary's Villas, Wimbledon, u.t. 95 yrs., g.r. 53*l.*, r. 1,115*l.*—By *F. J. Bisley & Sons*: 1, Layard-rd., Bermondsey, u.t. 63½ yrs., g.r. 3*l.* 10*s.*, 270*l.*—By *Walter Hall*: 3, Lalor-st., Putney, u.t. 90 yrs., g.r. 6*l.* 10*s.*, 340*l.*; building site, East Barnet-rd., Barnet, f., 405*l.*; 55, Vicarage-rd., Willesden, u.t. 85 yrs., g.r. 8*l.*, r. 28*l.* 12*s.*, 180*l.* — By *White, Druce, & Brown*: "Studley House," Goldhawk-rd., Ravenscourt-pk., sold privately.—By *Douglas Young*: 74 to 94 even, Greyhound-lane, Streatham, u.t. 85 yrs., g.r. 49*l.* 10*s.*, r. 418*l.*, 4,195*l.*; 96 and 98, Greyhound-lane, u.t. 85 yrs., g.r. 9*l.*, r. 80*l.*, 955*l.*; 2, Westwell-rd., u.t. 85 yrs., g.r. 5*l.*, r. 60*l.*, 615*l.*—By *W. Weston*: 8, Rodborough-mews, Paddington, u.t. 68 yrs., g.r. 4*l.* 10*s.*, 160*l.*; 12, Rodborough-mews, u.t. 68 yrs., g.r. 3*l.*, 185*l.*

MAY 2.—By *R. Tidey & Son*: 1 to 4, Lampeter-st., Islington, u.t. 59 yrs., g.r. 24*l.*, r. 161*l.* 4*s.*, 920*l.*; 5, Lampeter-st., u.t. 59 yrs., g.r. 6*l.*, r. 40*l.* 6*s.*, 235*l.*; 6 to 11, Lampeter-st., u.t. 59 yrs., g.r. 36*l.*, r. 241*l.* 16*s.*, 1,350*l.*; 12 to 21, Lampeter-st., u.t. 59 yrs., g.r. 60*l.*, r. 395*l.* 4*s.*, 2,195*l.*; 1 to 15, Cardigan-st., u.t. 59 yrs., g.r. 90*l.*, r. 604*l.* 10*s.*, 3,385*l.*; 2 to 8, Carmarthen-st., u.t. 59 yrs., g.r. 42*l.*, r. 282*l.* 2*s.*, 1,585*l.*—By *Hards & Bradly*: 107, King George-st., Greenwich, f., r. 18*l.*, 225*l.*, 2, 4, 6, and 8, York-st., f., 290*l.*: 57 and 59, Haddo-st., f., 415*l.*; 72, 74, 84, 86, and 90, The Stowage, Deptford, f., 435*l.*—By *W. A. Blakemore*: I.g.r. of 45*l.*, Lancaster-rd., Belsize Pk., u.t. 68 yrs., g.r. 2*l.*, 1,000*l.*; i.g.r. of 60*l.*, Carlton Vale, Kilburn, u.t. 53 yrs., g.r. 14*l.* 10*s.*, 855*l.*; two enclosures of land, Temple Fortune Lane, Hendon, f., 160*l.*—By *Newbon & Co.*: 26, Aldington Cres., Kingsland, u.t. 71 yrs., g.r. 6*l.*, 375*l.*; 6, 8, and 10, Colveston Cres., u.t. 61 yrs., g.r. 16*l.* 10*s.*, r. 103*l.*, 945*l.*; 2 and 4, Colveston Cres., u.t. 61 yrs., g.r. 11*l.* 10*s.*, r. 67*l.*, 630*l.*; 113 and 114, Forest Lane, Forest Gate, f., r. 60*l.*, 800*l.*; f.g.r. of 6*l.*, Forest-lane, reversion in 68 yrs., 150*l.*; 102, Offord-rd., Islington, u.t. 20 yrs., g.r. 8*l.*, r. 40*l.*, 200*l.*—By *Stimson & Sons*: 53, 55, 57, and 59, Crampton-rd., Penge, u.t. 73 yrs., g.r. 16*l.*, 400*l.*; 63, 69, 71, and 73, Crampton-rd., u.t. 73 yrs., g.r. 16*l.*, 395*l.*; 26 and 28, Kinglake-st., Old Kent-rd., and 60, Surrey-grove, u.t. 12½ yrs., g.r. 12*l.*, 100*l.*; 19, 21, 25, 27, and 29, Shenley-rd., Peckham, u.t. 81¼ yrs., g.r. 31*l.* 5*s.*, r. 178*l.*, 1,635*l.*; 2 to 19, Aberdour-st., Old Kent-rd., u.t. 15½ yrs., g.r. 61*l.* 10*s.*, 405*l.*; 10, 12, and 22, Kinglake-st., u.t. 11 yrs., g.r. 9*l.*, 155*l.*; 14, Kinglake-st., and 4, Eagle-pl., u.t. 10½ yrs., g.r. 6*l.*, 50*l.*; 30 to 40 even, Kinglake-st., u.t. 12 yrs., g.r. 10*l.* 10*s.*, 155*l.*; 92 to 100 even, Kinglake-st., u.t. 10½ yrs., g.r. 6*l.* 12*s.*, 205*l.*; 39 to 49 odd, King Arthur-st., u.t. 62 yrs., g.r. 23*l.* 17*s.*, 740*l.*; 28 to 36 even. Howbury-rd., Nunhead, u.t. 81 yrs., g.r. 22*l.* 10*s.*, 710*l.*; f.g.r. of 30*l.*, St. Hugh's-rd., Anerley, reversion in 72 yrs., 750*l.*

MAY 3.—By *Rider & Sons*: 40, Archer-st., Bayswater; and 112a and 112b, Portobello-rd., u.t. 27 yrs., g.r. 65*l.* 15*s.*, 205*l.*; 185 and 187, Clarendon-rd, Notting Hill, u.t. 56 yrs., g.r. 20*l.*, 380*l.*—By *Baker & Sons*: 27a. 2r. 9p. Building Land, Raynes Pk. Farm, Raynes Pk., f., 2,700*l.*—By *Jones, Lang & Co.*: 2 and 10, Church-st., Kensington, c., r. 256*l.*, 5,800*l.*; f.g.r. of 27*l.* 13*s.* 10*d.*, Henrietta-st., Dublin, reversion in 851 yrs., 720*l.*—By *Charles Hall*: Crofton Villa and Newbury Villa, Beacon-rd., Herne Bay, f., 1,000*l.*; 16, Rossiter-rd., Balham, sold privately.—By *R. Tidey & Son*: 8, Shepperton-rd., Islington, u.t. 59 yrs., g.r. 8*l.*, r. 48*l.*, 480*l.*; 20, 22, 24, Shepperton-rd., u.t. 59 yrs., g.r. 24*l.*, r. 134*l.*, 980*l.*; 32, 34, 36, Shepperton-rd., u.t. 59 yrs., g.r. 24*l.*, r. 132*l.*, 1,125*l.*; i.g.r. of 17*l.*, Sherborne-st., u.t. 28 yrs., g.r. 16*l.*, 1,800*l.*; 5, 6, 7, 8, 15, 16, 17, Rosemary-st., u.t. 59 yrs., g.r. 18*l.*, r. 272*l.*, 1,450*l.*; 16, 18, Shepperton-rd., sold privately.

[*Contractions used in these Lists.*—F.g.r. for freehold ground-rent; I.g.r. for leasehold ground-rent; i.g.r. for improved ground-rent; g.r. for ground-rent; r. for rent; f. for freehold; c. for copyhold; l. for leasehold; e.r. for estimated rental; u.t. for unexpired term; p.a. for per annum; yrs. for years; st. for street; rd. for road; sq. for square; pl. for place; ter. for terrace; cres. for crescent; yd. for yard, &c.]

PRICES CURRENT OF MATERIALS.

TIMBER.		
Greenheart, B.G.	ton	8/0/0 0/0/0
Teak, E.I.	load	10/0/0 16/0/0
Sequoia, U.S. ft. cu		1/10 2/2
Ash, Canada load		2/10/0 3/15/0
Birch, do.		2/10/0 3/15/0
Elm, do.		3/5/0 4/10/0
Fir, Dantsic, &c.		1/15/0 3/10/0
Oak, do.		2/15/0 4/15/0
Canada		5/15/0 7/5/0
Pine, Canada red		0/0/0 0/0/0
Do. Yellow		3/0/0 5/5/0
Lath, Dantsic, fath		4/10/0 5/10/0
St. Petersburg		5/0/0 6/10/0
Wainscot, Riga, &c., log		3/0/0 5/5/0
Odessa, crown		3/0/0 5/5/0
Deals, Finland		
2nd & 1st std	100	7/0/0 8/10/0
Do. 4th & 3rd		7/0/0 8/0/0
Do. Riga		7/0/0 8/0/0
St. Petersburg, 1st yellow		9/10/0 12/0/0
Do. 2nd yellow		7/10/0 9/0/0
Do. white		8/0/0 9/10/0
Swedish		7/0/0 15/10/0
White Sea		7/10/0 15/0/0
Canada, Pine 1st		22/0/0 24/10/0
Do. do. 2nd		16/10/0 17/10/0
Do. do. 3rd, &c.		8/5/0 10/10/0
Do. Spruce, 1st		8/10/0 10/0/0
Do. do. 3rd and 2nd		6/10/0 7/5/0
New Brunswick		6/0/0 7/0/0
Battens, all kinds		5/0/0 22/0/0
Flooring boards, 9in. 1 in. prep. 1st		0/9/0 0/14/0
Do. 2nd		0/6/6 0/11/0
Other qualities—		0/4/6 0/7/0
Cedar, Cuba	ft.	/3 /4
Honduras, &c.		/3 /4½
Mahogany, Cuba		/3½ /6
St. Domingo, cargo av.		/3½ 1/0
Mexican do. do.		/3 /4
Tobasco do. do.		/3½ /6
Honduras do.		/3½ /5½
Box, Turkey	ton	4/0/0 15/0/0
Rose, Rio		7/0/0 16/0/0
Bahia		6/0/0 15/0/0
Satin, St. Domingo		0/0/5 0/1/0

TIMBER (*continued*).		
Satin, Porto Rico		0/0/6 0/1/6
Walnut, Italian		0/0/3½ 0/0/7
METALS.		
Iron—Pig, in Scotland	ton	2/3/7½ 0/0/0
Bar, Welsh, in London		5/12/6 5/15/0
Do. do. at works in Wales		5/2/6 5/5/0
Do. Staffordshire, in London		6/0/0 6/10/0
COPPER—British cake and ingot		44/5/0 44/15/0
Best selected		45/0/0 45/10/0
Sheets, strong		51/0/0 0/0/0
Chili bars		41/11/3 41/16/3
YELLOW METAL	lb	0/0/4½ 0/0/4½
LEAD—Pig, Spanish	ton	9/16/3 9/17/6
English com. brands		9/17/6 10/0/0
Sheet, English, 6 lbs. per sq. ft. and upwards		10/15/0 11/0/0
Pipe		11/15/0 0/0/0
ZINC—English sheet	ton	18/10/0 19/0/0
Vieille Montagne		19/10/0 0/0/0
TIN—Straits		64/15/0 65/5/0
Australian		65/15/0 66/5/0
English Ingots		68/0/0 68/10/0
Banca		65/10/0 65/15/0
Billiton		64/15/0 65/0/0
OILS.		
Linseed	ton	20/0/0 22/10/0
Cocoanut, Cochin		24/15/0 25/0/0
Do. Ceylon		22/15/0 0/0/0
Palm, Lagos		23/0/0 0/0/0
Rapeseed, English pale		22/10/0 22/15/0
Do. brown		21/5/0 0/0/0
Cottonseed ref.		17/15/0 18/10/0
Oleine		20/10/0 21/10/0
Lubricating, U.S.		4/0/0 5/0/0
Do. refined		5/0/0 12/0/0
TAR—Stockholm	barrel	1/1/0 1/1/6
Archangel		0/15/6 0/0/0

TENDERS.

[Communications for insertion under this heading should be addressed to "The Editor," and must reach us *not later than* 10 *a.m. on Thursdays.*]

ACTON.—Accepted for the rebuilding of No. 16, Church-road, Acton, W., for Mr. F. A. Everitt. Mr. Edward Monson, architect, Acton Vale, W.:—
George Hooper, Acton, W. £770

ACTON.—For the erection of new vestry, at All Saints' Church, South Acton, for the Rev. J. Macarthur, M.A. Mr. Edward Monson, architect, Acton Vale, W.:—

Chamberlen Bros.	£825	Thomas Nye	£685
George Hooper	735	J. Dorey & Co., Brentford, W. (accepted)	649
John Christie	731		
George Lyford	730		

ARMLEY.—Accepted for new warehouse, Far Fold, Armley, for Mr. Councillor Gaunt. Mr. F. W. Rhodes, architect, Upper Wortley, Leeds:—

Bricklaying and Masonry.—W. W. Haley, Bramley	£247 0
Carpentry and Joinery.—A. Knapton, Wortley	112 0
Plumbing and Glazing.—A. B. Cromack, Armley	16 16
Slating.—J. Atkinson & Son, Leeds	23 14

BOSTON (Lincs.).—Accepted for the supply of 2,400 tons granite, &c., road-metal, for the Rural District Council:—

	s.	d.	
Mountsorrel Granite Co., Mountsorrel	10	3	at Boston
Grobey Granite Co., Grobey	10	5	,,
Wm. Grimley & Son, Sutton Bridge	6	9	Slag at Boston
Islip Iron Co., Islip	6	9	,,
Bestwood Iron, &c., Co., Bestwood	5	6	,,
Thos. Bullin & Co., Lim., Wellingboro'	6	9	,,

CARDIFF.—For the erection of school buildings, Romilly-road, Barry, for the U.D. School Board. Mr. Geo. Thomas, architect, Queen's Chambers, Cardiff. Quantities by the architect:—

H. J. Money	£7,065	Lloyd & Tape	£6,275
F. Small	6,538	E. K. Evans & Bros.	5,959
Henry Davies	6,532	Dd. Davies	5,770
D. C. Jones & Co.	6,435	Geo. Rutter, Barry*	5,395

[The architect's estimate, £5,444.]
* Accepted.

COLCHESTER.—For rebuilding new premises, Wyre-street, Colchester, for Mr. Robert Howe. Mr. G. H. Page, architect, Trinity Chambers, Colchester:—

G. Bowles	£1,370	A. Chambers	£1,045
G. Dobson	1,197	F. Dupont (accepted)	584
G. Farran	1,145		

[All of Colchester.]

COXHOE (Durham).—For rebuilding Four Mile Bridge, Coxhoe. Mr. Wm. Crozier, engineer, Shire Hall, Durham. Quantities by Mr. J. Ezra Miller, 1, Tunstall-road, Sunderland:—

Draper & Sons	£924 2 9	W. C. Atkinson, Stockton-on-Tees*	£774 6 10
J. G. Gradon	866 10 0		
G. Bailey	854 15 0		

* Accepted.

DUBLIN.—Accepted for additions and alterations to National Schools, Haddington-road, Dublin, for the Very Rev. Canon Dillon, St. Mary's. Mr. Walter G. Doolin, architect, Dublin. Quantities by Messrs. Morris, Dublin:—
James Kiernan, Dublin, 100, Talbot-street, Dublin £536

DUBLIN.—Accepted for new organ-gallery, screens, &c., at the church of the Holy Family, Aughrim-street, Dublin, for the Very Rev. J. A. Burke, P.P. Mr. Walter G. Doolin, architect, Dublin. Quantities by Messrs. Morris, Dublin:—
Patrick Hanway, 36a, North Great George-st., Dublin £373

EALING.—For erecting a pair of semi-detached villas at Sunnyside-road, Ealing, for Messrs. Wilcox & Sons. Mr. F. H. Jones, architect and surveyor, Ealing, W. Quantities not supplied:—

Edwards & Son	£1,319	Nye	£1 300
Bailey	1,300	Barnett	1,300

FARINGDON.—Accepted for rebuilding a cottage at Little Coxwell, near Faringdon, Berks., for Mr. W. R. Hole. Mr. Wm. Drew, architect, 22, Victoria-street, Swindon:—
Charles Williams, New Swindon £166 17

FINEDON (Northampton).—For the enlargement of National Schools, Finedon. Messrs. Mosley & Anderson, architects and surveyors, Goodyear Chambers, Northampton:—

G. Branson & Son	£439 0	T. Chapman	£395 0
A. Ball & Son	435 0	Wilford & Judkin	368 15
Tebbutt & Pratt	401 0	F. Henson, Finedon*	387 10

* Accepted.

GALWAY.—Accepted for the erection of five small iron bridges. Mr. James Perry, C.E., County Surveyor, Galway:—
Murdoch & Cameron, Glasgow £172

HARROGATE.—For additions, &c., to buildings, near Spring Villa, for the Corporation. Mr. S. Stead, Borough Surveyor, Municipal Offices, Harrogate:—

Masonry.—D. Walls, 2, Church-square	£133 10 0
Joinery.—John Harvey, Cornwall-road	105 0 0
Slating.—J. Shepherd, Haywra-street	11 6 0
Plastering.—Laycock, Bros., Franklin Mount	16 10 0
Painting.—Jessop & Cosgrove, Station Parade	8 1 5
	£294 7 5

Plumber's work by Corporation plumber.
[All of Harrogate.]

HENDON.—For levelling, paving, kerbing, channelling, metalling, &c., Ravenstone-road (part only), (Private Improvements, Contract No. 16), for the Hendon Urban District Council. Mr. S. S. Grimley, Engineer and Surveyor:—

	Slag foundation per cube yard. s. d.	Excavation per cube yard. s. d.	Total Amount of Tender. £. s. d.
J. Mowlem & Co.	12 6	3 0	398 0 0
T. Adams	9 0	2 0	395 2 5
W. Griffith	10 0	3 0	383 0 1
A. T. Catley	6 8	2 0	379 0 0
J. Allen & Son	7 9	2 9	371 15 5
Richd. Ballard, Ltd., Child's Hill, N.W. (accepted)	6 0	2 0	362 16 9
E. Hollingsworth	8 0	2 6	357 0 0
H. Lee	6 8	2 0	351 18 2

HENDON.—For kerbing, channelling, paving, &c., in the Edgware-road, for the Hendon Urban District Council. Mr. S. S. Grimley, Engineer and Surveyor:—

Mowlem & Co.	£534 17 9	J. Allen & Son	£493 14 10
Nowell & Robson	521 9 0	Richard Ballard, Ltd.	479 14 4
A. T. Catley	518 2 4	H. Lee	470 4 8
E. Hollingsworth	515 2 3	T. Adams, Green-lanes, Wood Green*	456
W. Griffith	495 10 1		

* Accepted.

HORFIELD.—For the construction of sewerage works, Ashley Down, for the Urban District Council. Mr. A. P. I. Cotterell, C.E., Lonsdale Chambers, Baldwin-street, Bristol:—

Durnford & Son	£1,030 0 0	G. H. Wilkins	£865 18 9
Lloyd & Powell	950 0 0	A. J. Beaven, Deanlane, Bedminster*	862 0 0
J. Perkins	925 0 0		
S. Ambrose	901 9 4	Love & Waite†	640 0 0
J. Dare & Co.	875 18 0		

* Accepted.
† Withdrawn.

LEWES.—For the construction of sewer, &c., Southover, for the Town Council. Mr. Thomas Wm. Franks, C.E., Borough Surveyor, Town Hall, Lewes. Quantities by Borough Surveyor:—

Peter Peters	£2,046 9 1	W. H. Saunders & Co., Bournemouth*	£1,680 9 8
Thomas Adams	1,883 14 10		
M. S. Kitteringham	1,878 12 8		

* Accepted.

LLWYNYPIA (Wales).—For rebuilding Jerusalem Welsh Baptist Chapel. Messrs. Griffiths & Jones, architects, Town Hall Chambers, Tonypandy and Pontypridd:—

Rowlands & Lloyd	£4,395 0	D. Evans & Sons	£3,853 0
Charles Jenkins	4,025 0	D. Jones, Treforest*	3,586 10
D. C. Jones & Co.	3,989 0		

* Accepted.

LONDON.—For alterations to the "Sir Robert Peel" public-house, Malden-road, Kentish Town, N.W., for Mr. A. W. Ritchie. Mr. Albert E. Pridmore, architect, 2, Broad-street Buildings, E.C.:—

Edward Pearce	£285	Marchant & Hirst	£279
Antill & Co.	245	London & Co.*	169
W. J. Wiltshire	230	Hayworth Bros.	168
S. R. Lamble	219		

* Accepted.

LONDON.—For rebuilding No. 31, St. John's-lane and portion of the Friends' Meeting House, Clerkenwell, E.C., for the Society of Friends. Messrs. Edward Saunders & Son, architects, 6, Bishopsgate-street Without, E.C. Quantities by Mr. Walter C. Phillips:—

Hall Beddall	£2,250	Mattock Bros.	£1,955
Ashby & Horner	2,098	E. Laurence & Sons	1,940
Ashby Bros.	2,036	Prestige & Co.	1,927
Colls & Sons	2,033	Resson	1,875
Jerrard & Sons	2,029	Woodward & Co.	1,860

LONDON.—For an addition to the west end of St. Frideswide's Church, Poplar, for the Christ Church Oxford Mission. Mr. Robert Willey, architect, 33, New Bridge-street, Blackfriars, E.C.:—

Carmichael	£870 0	Kirby & Chase	£760 0
Woodward & Co.	792 0	Tyerman	747 0
Richardson	763 19		

LONDON.—For the extension of the Nursing Home at London Hospital, Whitechapel, E. Mr. Rowland Plumbe, architect:—

John Yates	£15,841 5 6	Howell J. Williams	£13,275 0 0
Whitehead & Co.	13,650 0 0	E. Lawrence & Son	13,195 0 0
L. H. & R. Roberts	13,635 0 0	Perry & Co.	13,166 0 0
T. Rider & Son	13,609 0 0	Holloway Bros.	12,985 0 0
W. Goodman	13,333 0 0	W. Shepherd	12,885 0 0

LONDON.—For making-up Lichfield-grove, for the Finchley Urban District Council. Mr. Francis Smythe, Surveyor, Council Offices, Church End, Finchley:—

H. Crane	£1,617 0 0	Wm. Griffiths, 289, Kingsland-road, N. (accepted)	£1,355 0 0
R. Ballard, Ltd.	1,587 0 0		
T. Adams	1,422 15 6		

LONDON.—For painting and other works at St. Marylebone Infirmary, Rackham-street, Notting Hill :—

White	£2,900	Lilly & Lilly, Ltd.*	£1,839
Wall	1,897	Barber & Bellamy	1,550
Nye	1,870		

* Accepted.

LONDON.—For making-up Dickenson-road (and Section), for the Hornsey Urban District Council. Mr. E. J. Lovegrove, Engineer and Surveyor :—

Mowlem & Co.	£916 0 0	W. Griffiths	£767 6 8
R. Ballard, Limited	812 0 0	Thomas Adams, Wood Green *	759 17 8
George Bell	785 0 0		

* Accepted.

LONDON.—For repairs, drainage, improved sanitary and other works at St. George's Union Workhouse and Infirmary. Mr. H. Saxon Snell, architect, London :—

Leslie & Co.	£4,719	Mowlem & Co.	£4,200
F. M. Heywood	4,492	N. Lidstone	4,193
Geo. Foxley	4,302	H. Wall & Co., Carlton Works, Kentish Town*	3,897
W. Pearce	4,245		

* Accepted.

MORLEY (Yorks.).—Accepted for the erection of school buildings, Bridge-street, for the School Board. Messrs. Holtom & Fox, architects, Dewsbury. Quantities by the architects :—

Excavating, Masonry, and Bricklaying.—J. & J. Sugden, Morley	£4,628 14
Carpentry and Joinery.—Saml. Blackburn, Halifax-road, Dewsbury	2,178 0
Plumbing and Glazing.—Geo. F. Firth, Morley	1,000 0
Slating.—S. & J. Thornton, Eccleshill, near Bradford	712 15
Plastering.—D. Witty, Birstall, near Leeds	190 0
Painting.—Roylance & Horsman, Leeds	118 14
Ironfoundry.—A. Dougill & Co., Ltd., Great George-street, Leeds	62 12
Total	8,892 13

NEW ROSS (Ireland).—Accepted for the erection of the Parish Church, for the Very Rev. Canon Kavanagh, D.D., V.G., New Ross. Mr. Walter G. Doolin, architect, 9, Dawson Chambers, Dublin. Quantities by Messrs. Morris, Dublin :—

A. Cullen, New Ross £16,300

PENARTH.—For pulling down and rebuilding Baptist Chapel. Messrs. Jones & Thornley, architects, St. Mary's-street, Cardiff :—

David Davies	£3,800 0 0	Marsh & Wride	£3,461 0 0
H. Tape	3,600 0 0	Escott & Ford	3,395 18 0
J. Jones	3,537 10 0	D. G. Price, Penarth*	3,000 0 0
A. Berridge	3,534 0 0	Thos. Bevan	2,945 6 4

* Accepted.

PINNER.—For repairs and decorations to Rugby House, Pinner, Middlesex, for the Metropolitan Railway Company. Messrs. Pridmore & Anderson, architects, 28, High-street, Watford, Herts :—

	Main Specification.	Extra on Pointing.	Specification No. 2.
Brightman	£550 0 0	£10 0 0	£28 0 0
Turner	544 0 0	8 0 0	28 0 0
Gould	535 17 6	—	18 10 0
London & Co.	492 0 0	5 0 0	29 0 0
Lamble	439 0 0	7 0 0	27 0 0
Marchant & Hirst	396 0 0	5 0 0	32 7 6
Cowley & Drake	395 0 0	2 10 0	35 0 0
Head & Son	365 0 0	3 0 0	21 0 0
Wiggs	339 0 0	—	22 0 0

RAMSEY (Hunts.).—For the supply of 1,250 tons broken granite, for the Urban District Council :—

	Per ton.
Ennals Bros.	10/0 and 9/9
Cliffe Hill Granite Co.	10/10 and 11/4
Croft Granite Co.	10/9
Ferguson & Starkey	9/10
Wm. Grimley	10/0, 10/6, 10/3, 10/8, & 10/2
H. W. Tyre	9/0 and 9/6
Groby Granite Co.	9/11 and 10/2
Enderby and Stoney Stanton Granite Co.	9/10 and 10/0
Alex. Beeby, jun.	10/2, 10/8, 10/3, and 10/6
Isaac Collett	10/4 and 10/3
Whitwick Granite Co.	10/1 and 10/4
L. Sommerfeld	12/0, 12/2, and 11/9
Ellis & Everard	11/0 and 11/6
Charnwood Granite Co., Charnwood Quarries, near Loughborough (accepted)	10/0 and 10/6

ROWHEDGE (Essex).—For new hall and stables, Lion Field Estate, Rowhedge, for Mr. R. Daniell. Mr. G. H. Page, architect, Trinity Chambers, Colchester :—

J. Worricker	£420	G. Rackham	£358
T. Dupont	365	A. Diss	350
G. Blaice	359		

[All of Colchester.]

ST. MARY CRAY (Kent).—For the erection of a shop in High-street, St. Mary Cray. Mr. St. Pierre Harris, architect, 8, Ironmonger-lane, E.C.; and Orpington :—

W. R. Taylor	£308	F. Duthoit	£255
Somerford & Son	279	T. Knight, Sidcup (accepted)	239
R. A. Lowe	259		

SEVENOAKS.—For levelling, metalling, kerbing, gravelling, channelling, and making good of the Bradbourne Park-road, and the laying of stoneware pipe sewers with manholes, lampholes, gullies, and other works connected therewith, for the Urban District Council. Mr. Jabez Mann, C.E., surveyor :—

E. Iles £2,199
S. Hudson, Streatham-hill * 2,072

* Accepted according to schedule of prices.

SKIPTON (Yorks.).—Accepted for the erection of three shops, &c., High-street, for Mr. Fattorini. Mr. J. W. Broughton, architect, 19, High-street, Skipton. Quantities by Mr. J. Flew, Bradford :—

Masonry.—Thos. Duckett
Joinery.—W. Roberts & Son
Plastering.—T. Bailey
Plumbing, Glazing and Painting.—A. Calvert
Slating.—Rd. Thornton & Sons
} £2,225

[All of Skipton.]

SOUTHSEA.—Accepted for the erection of three shops and houses, Albert-road. Mr. Alfred H. Bone, architect, Cambridge unction, Portsmouth :—

H. Jones, Broad-street, Southsea £1,550

SWANLEY (Kent).—For repairs to properties at Moultan Hill, Swanley, Kent. Mr. St. Pierre Harris, architect and surveyor, 8, Ironmonger-lane, E.C., and Orpington :—

C. Catlett	£175	Stebbings & Pannett	£150
R. A. Lowe	170	J. Ward, Swanley*	127
Somerford & Son	157		

* Accepted.

SWINDON.—For erecting an infants' school, and additions and alterations to the Haydon School, for the Rodborne Cheney School Board. Mr. William Drew, Architect to the Board, 22, Victoria-street, Swindon :—

W. Gerring	£845 10	W. Chambers, New Swindon (accepted)	£615 0
H. Flewelling	730 0		
C. Williams	724 17		

SWINDON.—Accepted for additions to the "Eagle Tavern," Regent-street, New Swindon, for Mr. H. W. Thomas. Mr. William Drew, architect, 22, Victoria-street, Swindon :—

Charles Williams, New Swindon £862 17

THROCKLEY (County of Northumberland).—For the erection of a dwelling-house, scullery, stable, cartshed, and out-offices, for Mr. M. Henderson. Mr. W. Allen, architect, Ryton-on-Tyne, County Durham. Quantities by architect :—

Whole Tenders.

Henderson & Chalmers	£956 6 6	Richard Wood, 9, Greenwell-street, Blaydon-on-Tyne*	£879 0 0
Anderson & Davidson	937 13 5		
John See	899 1 0		

* Accepted.

Single Tenders.—Excavating, Masonry, and Bricklaying.

Roger Weatherley	£477 5 0	Thompson & Sanderson	£471 0 0
M. A. Armstrong	474 7 0		

Single Tenders.—Carpentry and Joinery.

Geo. Wilson	£350 0 0	J. Mitcheson & Co.	£269 0 0
Thos. Waugh	320 0 0	J. H. Rutherford	265 0 0
Thirwell & Sons	318 15 4	J. Shild	244 2 4
Robt. Finlay	293 13 0	R. Thompson & Co.	243 0 0
McCallum & Co.	289 0 0		

Slating.

Edwd. Beck & Sons	£57 5 9	John Hewitson	£56 11 3
Charles Nicholson	57 0 0		

Plastering.

W. B. Wilkinson & Co., Ltd.	£80 4 4	John Chapman	£73 10 0
		W. T. Wallace	66 0 0

Plumbing.

W. Burns	£39 0 0	R. Thompson & Co.	£27 2 0
H. Watson & Sons	36 10 0	J. W. Jefferson	22 6 0
J. Shotton & Co.	28 7 0	J. A. Turnbull & Son	21 10 3
J. W. Kyle	27 2 0		

Painting and Glazing.

C. Robson	£37 10 0	M. J. Rutter	£27 0 0
J. A. Turnbull & Son	33 8 6		

WALTHAMSTOW.—For making-up Netley-road and seven others, &c., for the Urban District Council. Mr. Geo. W. Holmes, C.E., surveyor, Town Hall, Walthamstow :—

Mansfield-road.

W. Griffiths	£514 1 4	J. Bloomfield	£389 15 6
T. Adams	485 0 0	J. Reeves, High-street, Walthamstow *	388 0 0
G. Wilson	413 0 0		
Jesse Jackson	404 0 0		

Westbury-road, (north end).

T. Adams	£209 0 0	J. Reeves	£178 0 0
W. Griffiths	192 12 8	J. Bloomfield	171 0 0
Jesse Jackson	180 0 0	G. Wilson*	160 0 0

Selborne-avenue.

T. Adams	£189 0 0	J. Reeves	£168 0 0
J. Bloomfield	181 0 0	Jesse Jackson	144 0 0
W. Griffiths	179 3 11	G. Wilson*	130 13 8

Netley-road.

W. Griffiths	£316 0 0	Jesse Jackson	£230 0 0
T. Adams	297 0 0	E. Baritrop	224 10 0
J. Reeves	248 0 0	G. Wilson*	191 15 0
J. Bloomfield	241 0 0		

Station-road (south end).

T. Adams	£79 0 0	G. Wilson	£57 10
W. Griffiths	75 0 0	J. Bloomfield	55 0
J. Reeves	58 0 0	J. Jackson*	55 0

Vernon-road.

T. Adam	£149 0 0	J. Bloomfield	£130 0 0
W. Griffiths	142 12 11	Jesse Jackson	120 0 0
J. Reeves	138 0 0	G. Wilson*	111 5 4

Osborne-grove.

T. Adams	£98 0 0	J. Bloomfield	£60 0 0
W. Griffiths	73 0 0	J. Reeves*	58 0 0
G. Wilson	63 9 7	Jesse Jackson	55 0 0

Accepted.

WALTHAMSTOW.—For the erection of a pair of villa-residences in Elmsdale-road. Mr. Jasper J. Kelf, architect, 26, High-street, Walthamstow :—

Morrison & Goodwin	£950 0	Dartnall Bros.	£667 0
Thompson	817 0	Rawlins & Furner, Walthamstow*	650 0
Lawrence	667 10		

* Accepted.

WEST LULWORTH (Dorset).—For the erection of two houses and shop, at West Lulworth, Dorset, for Mr. E. J. Randall. Mr. G. Mitchell, architect. Quantities by the architect :—

J. Miller	£1,025	D. Hitching	£1,133

WINTON (near Bournemouth).—For the erection of British and Sunday schools. Messrs. Lawson & Donkin, architects and surveyors, Yelverton-chambers, Bournemouth. Quantities by architects :—

T. Holly	£1,509 0	J. W. Lucas	£1,460 0
Entwisle & Cox	1,490 0	F. Hoare & Son	1,450 0
Wm. Hoare	1,487 0	C. Hunt, Winton*	1,436 15
George & Harding	1,464 0		

* Accepted.

WREXHAM.—For the construction of an iron girder bridge, Five Fords Farm, for the Urban Authority. Mr. J. W. M. Smith Borough Surveyor, Wrexham :—

Phœnix Foundry Co.	£115 3 0	Cudworth & Johnson	£90 0 0
Raybould & Co.	110 0 0	J. O. Brettell	85 2 6
Christy & Co.	107 19 4	Dyne, Steel, & Co.	68 0 0
E. C. & J. Keay, Ltd.	105 19 8	Rubery & Co., Darlaston, South Stafford*	66 13 0
Person & Co.	99 0 0		
Jonathan Curtis	94 15 0		

* Accepted.

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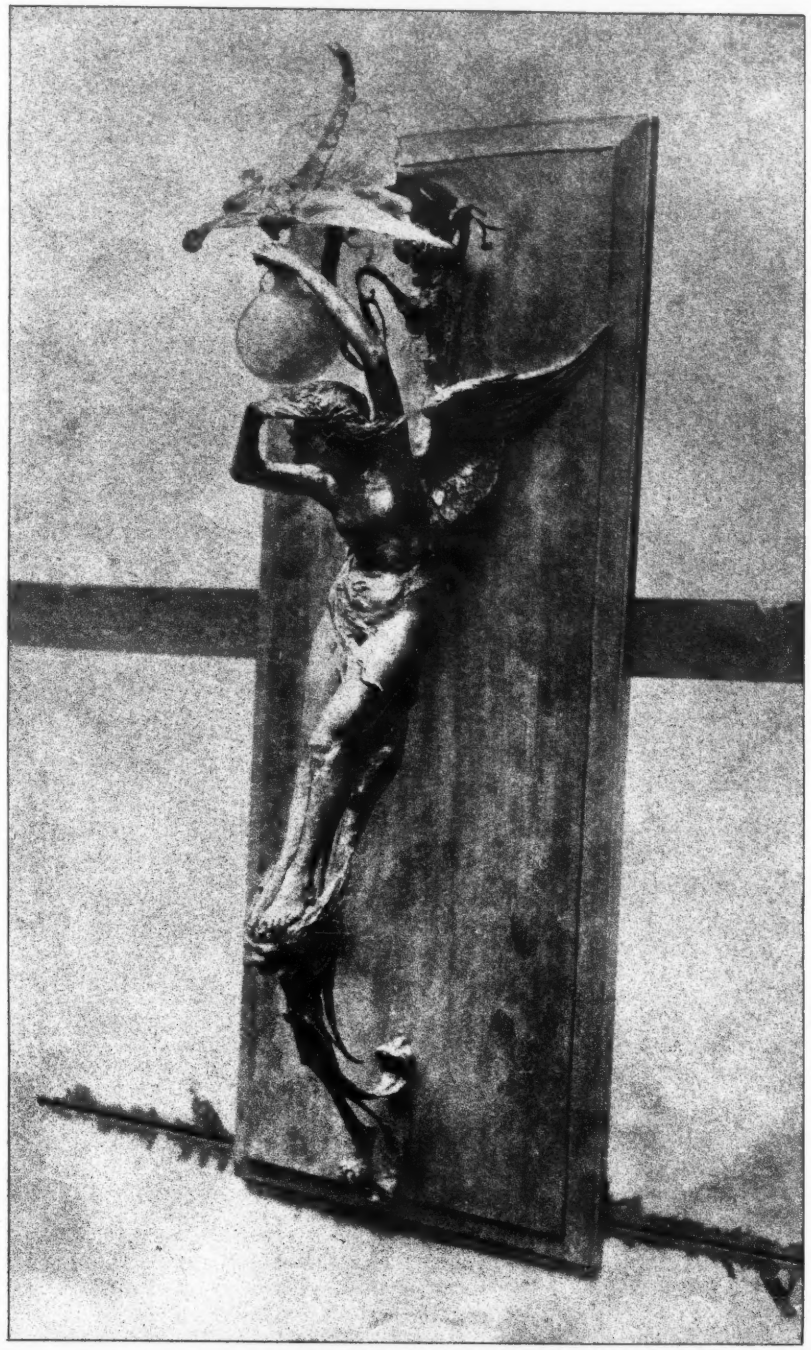

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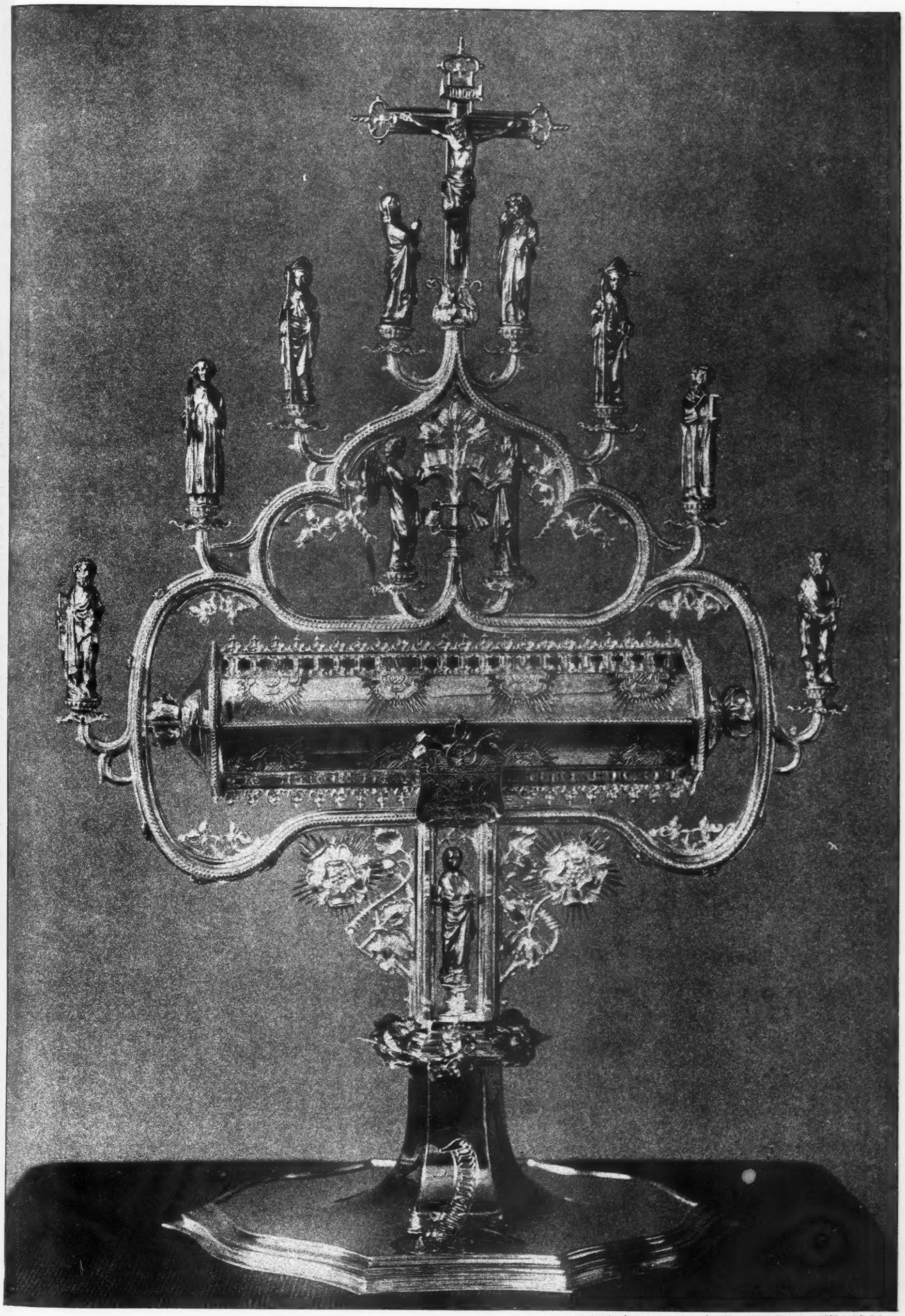

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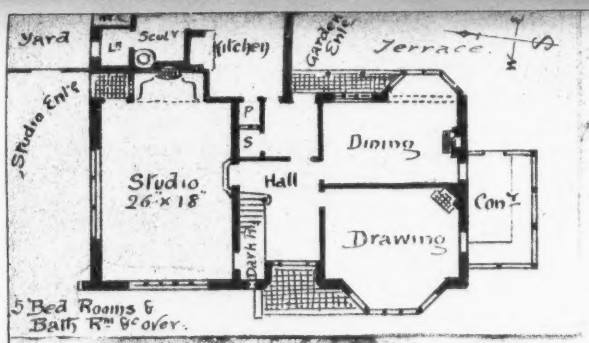

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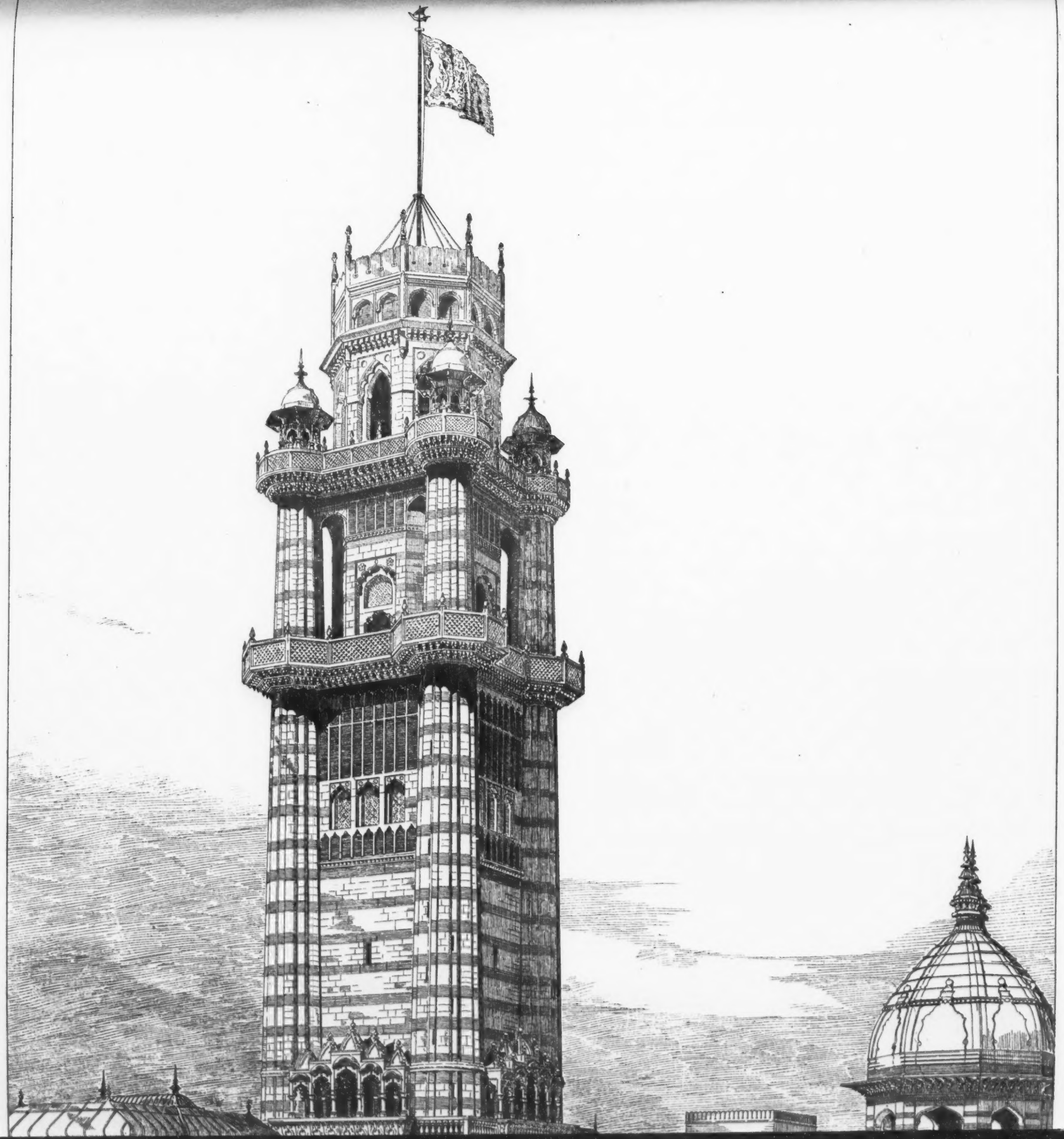

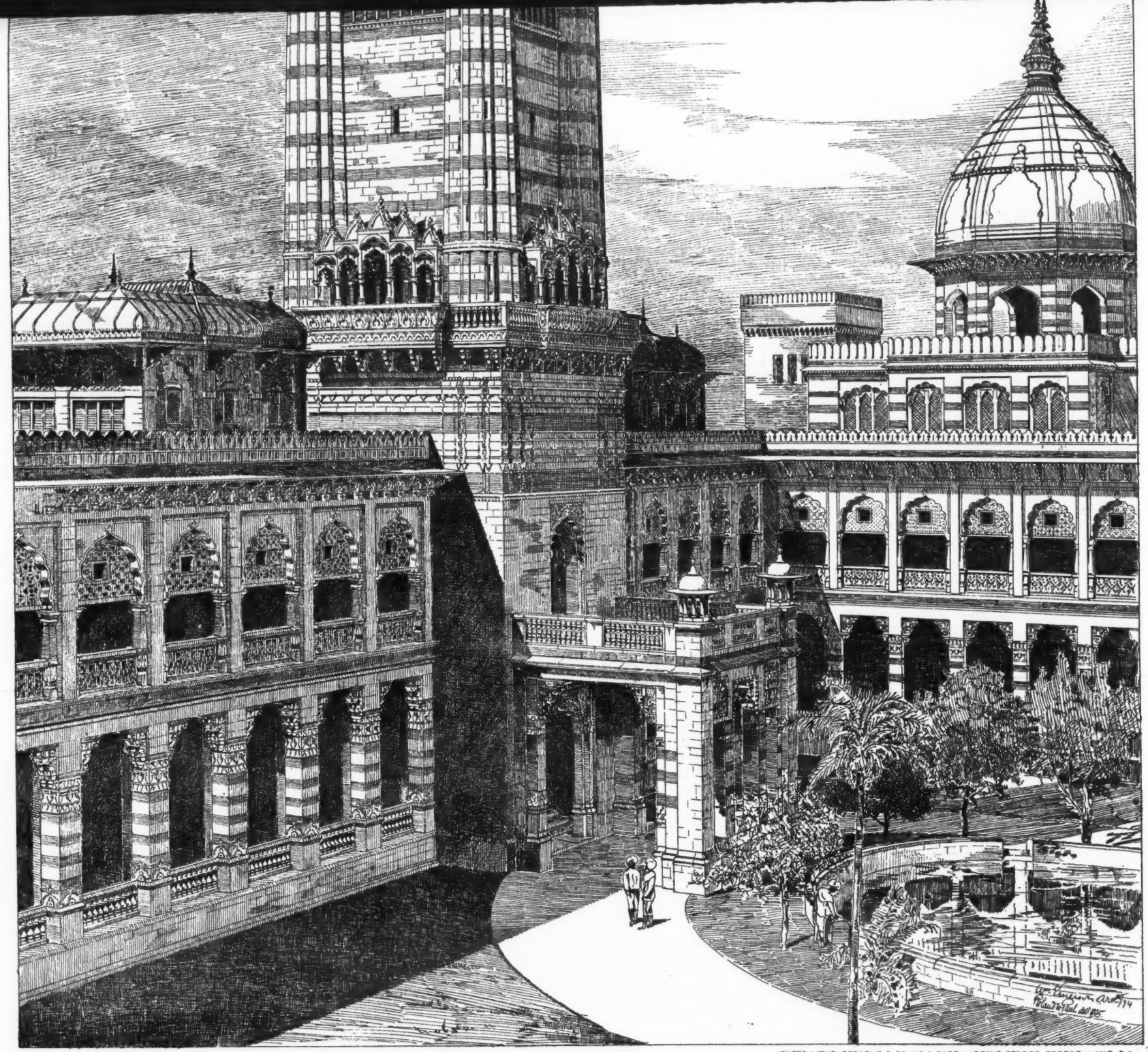

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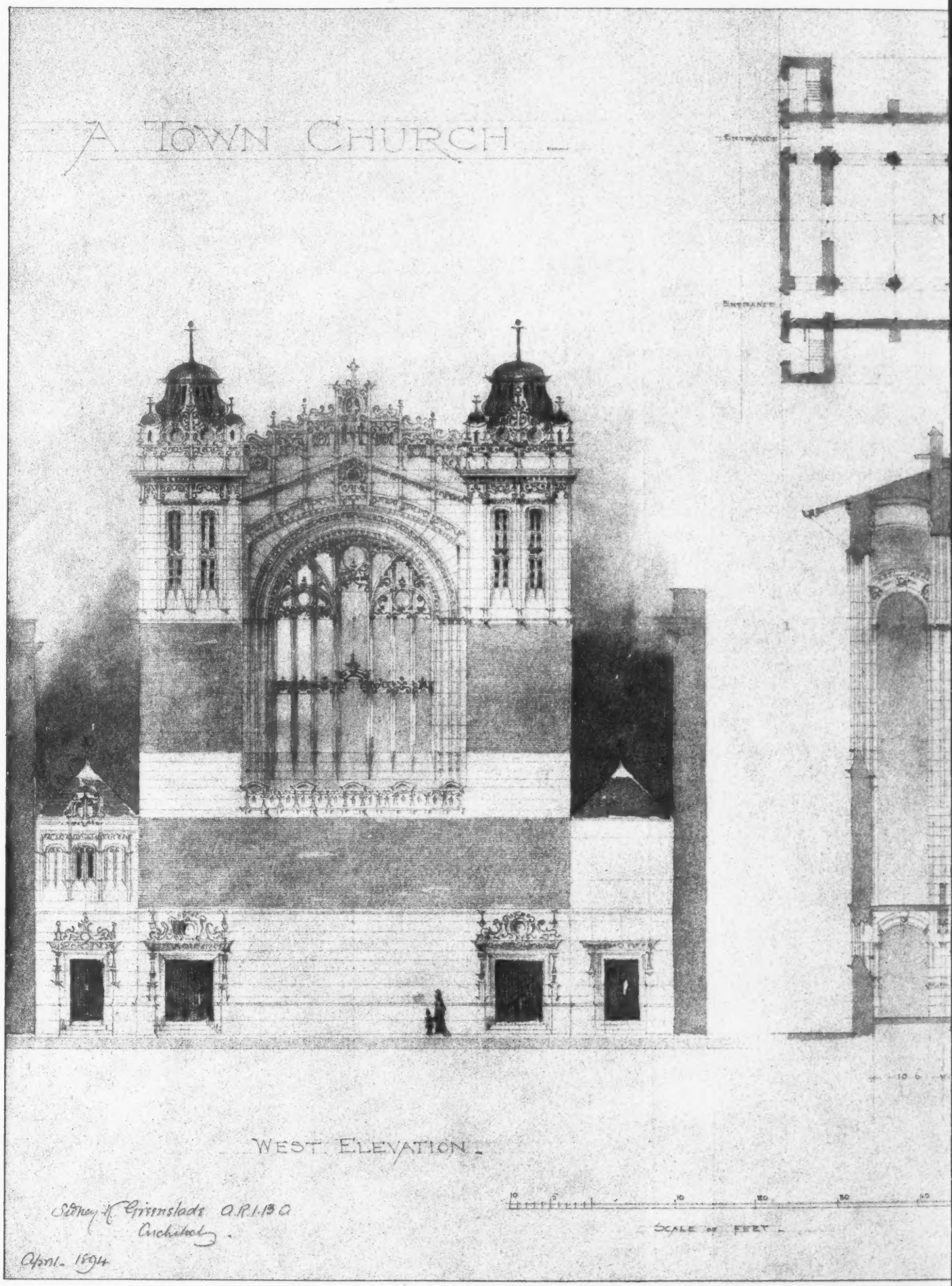

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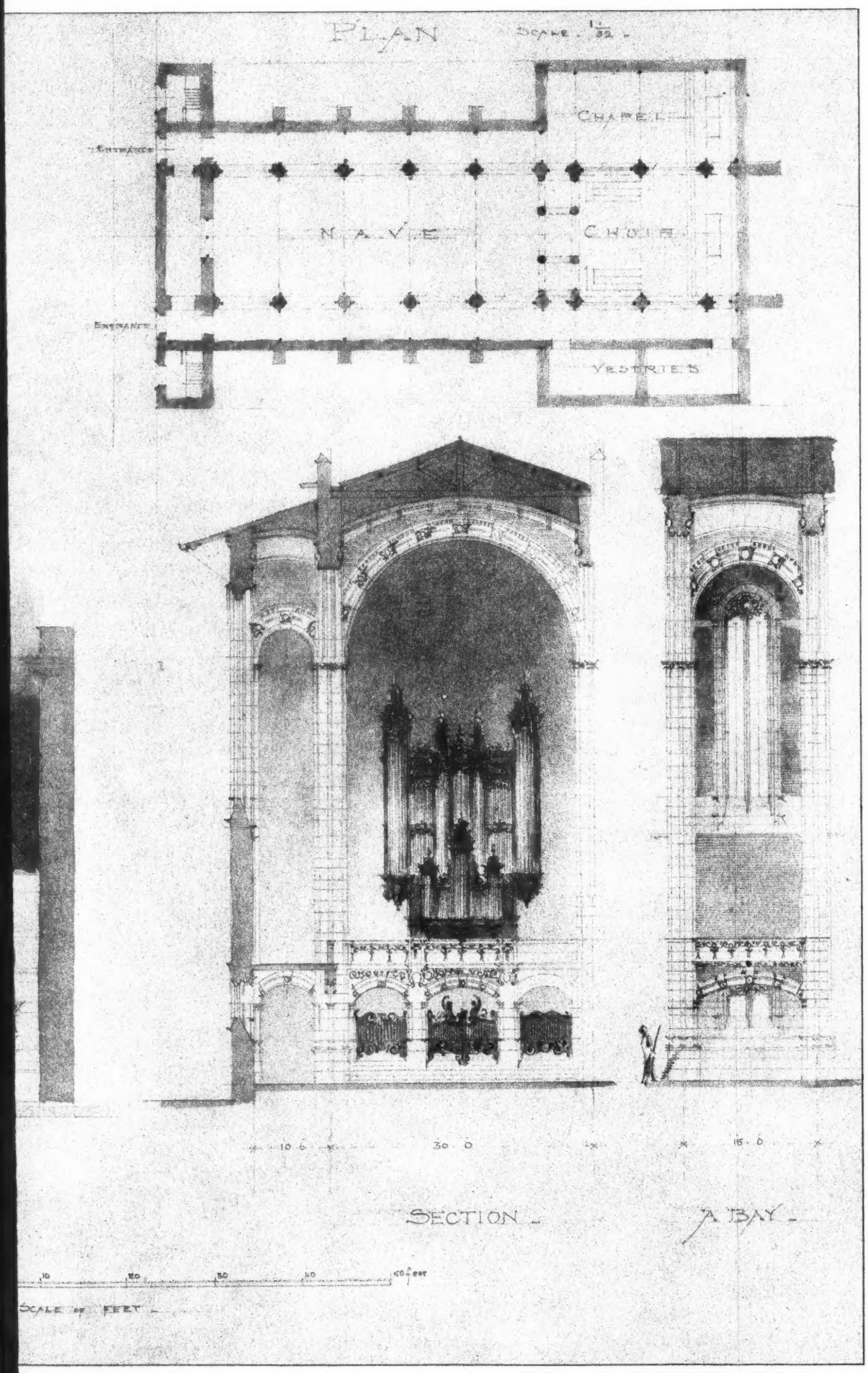

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